

**CONNECTION MODELLING AS A MECHANISM FOR
ADDRESSING SOCIAL INEQUALITY IN DURBAN'S PERI-URBAN
BUILT ENVIRONMENT**

A PROPOSED PUBLIC TRANSPORT HUB

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A PROPOSED PUBLIC TRANSPORT HUB

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DECLARATION

Submitted in partial fulfilment of the requirements for the degree of Master of Architecture, in the Graduate Programme in Architecture, University of KwaZulu-Natal, Durban, South Africa.

I declare that this dissertation is my own unaided work. All citations, references and borrowed ideas have been duly acknowledged. It is hereby submitted for the degree of Master of Architecture in the Department of Architecture in the School of the Built Environment and Development Studies, University of KwaZulu-Natal, Durban, South Africa. None of the present work has been submitted previously for and degree or examination in any other university.

Craig Alistair William Cullen

June 2013

DEDICATION

This work is dedicated to all those who have fought and struggled for their beliefs in a free and democratic South Africa.

To those who have the power and the courage to stand up against oppression of others, for the justice of the weak and those in need. For the efforts to create an open platform for discussion, for the freedom of thought and belief and for each and every one to express his or her opinion without prejudice of subordination or ridicule.

“Courage is not the absence of fear, but rather the judgement that something else is more important than fear.”

James Neil Hollingworth (1933 – 1996)

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ABSTRACT

South Africa boasts such intrinsic beauty in its social and physical geography and at the heart of this beauty lie its people. For each culture that has fought for their beliefs and systems, wars have been fought and lives have been lost. One thing which remains constant however is the belief that we the people can work together to live in peace and harmony and leave a better place to those who come after.

Apartheid South Africa was divisive in many ways and its results have left many wounds on the country's architectural geography. Social inequality is manifest in the tapestry of everyday life and the Peri-Urban scars of our past have become vivid thresholds of cross-cultural debate. The Apartheid planning model of disconnection through race and class has seen a massive effort to refocus on Durban's urban core, whereas the rich tapestry of the Peri-Urban townships is often neglected.

In order to reconnect the outer city geographies back into the urban whole an investigation into the theory of connection between people and their physical environment needs to be undertaken. This dissertation looks at how the theory of connection might enable a unified Durban and rehabilitate the tenderness of past planning processes.

Public Transport is one such mechanism which can connect communities, no matter the distance nor socio-economic status and it is within this context that the dissertation offers new insight into the critical and exciting reconnection process.

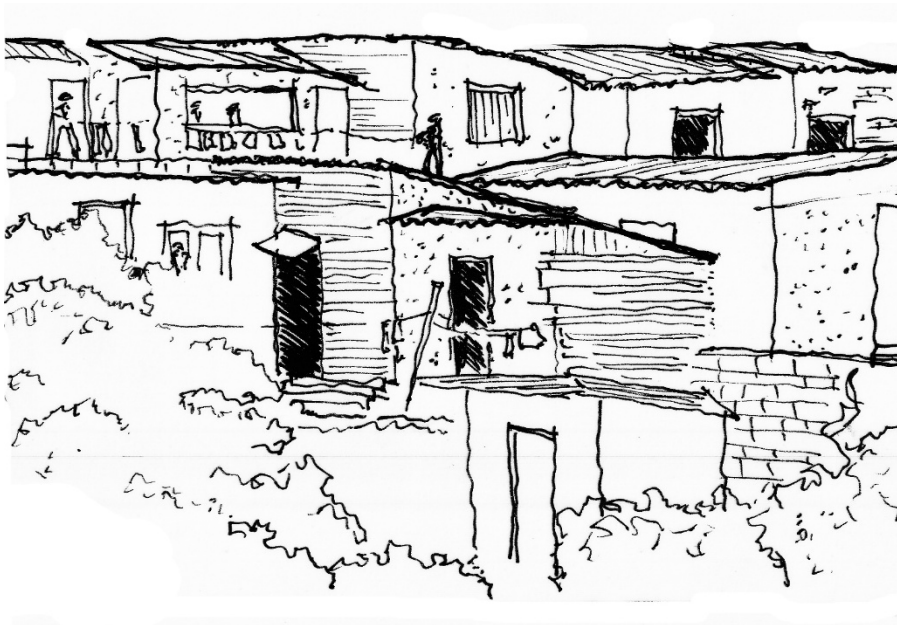
1.0 INTRODUCTON

1.1.1 Background

“Travel is an expression of a civilized society – the more people move, the greater their sense of personal freedom”

Brian Edwards (1997)

According to the bureau of statistics, Durban is the 3rd largest city in terms of population but yet one of the most deeply divided in terms of social equality. Although life in the urban core is characteristic of any emerging mega city, almost 70% of the population still resides outside the CBD as a result of the Apartheid urban planning model which was aimed at social disconnection.



Illus. 1: Artistic sketch: Cramped Peri-Urban dwellings located in the former Bantustan community of KwaMashu. Source: Author (2013)

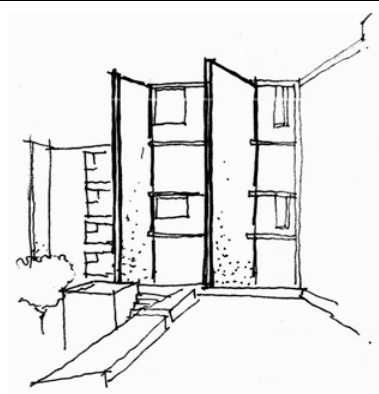
The theory of Otherness and how it manifests itself in socially unequal societies is one of the most relevant and pertinent topics of discussion with regards to social inequality currently debated amongst scholars. There is currently a significant lack of research which examines how Otherness is most strongly manifested in Durban's Peri-Urban communities which formed as a result of Apartheid and how architecture can possibly address this. As social inequality in Durban's Peri-Urban communities is so rampant, the built environment has evolved to be completely visually and structurally disconnected from the architecture of the current urban core and surrounding suburbs. Architectural disconnection is not specific to a particular Peri-Urban community but is a problem in most communities that were former Bantustan communities set up by the Apartheid government.

The dissertation will offer not a single typology which is site specific, but rather an architectural model which other Peri-Urban communities can use to construct their own responses to their specific social inequalities. A model which best supports local social equality and regional connectivity would be instrumental in that it could be used to reconnect outlying Peri-Urban communities back into Durban's urban environment which would directly address the problems of social inequality due to the various forms of disconnection.

As former eThekweni municipality city manager Dr Michael Sutcliffe noted:

“Under apartheid, public transport for the majority of residents was very fragmented and unsafe, including an illegal taxi industry and a rail system doing much to reinforce the apartheid city. Under our democratic dispensation, very little has changed” - (Sutcliffe 2009)

This above highlights the problem with the current public transport model and thus public transport architecture will be the typology at the heart of the new model. The Integrated Development Plan (IDP)



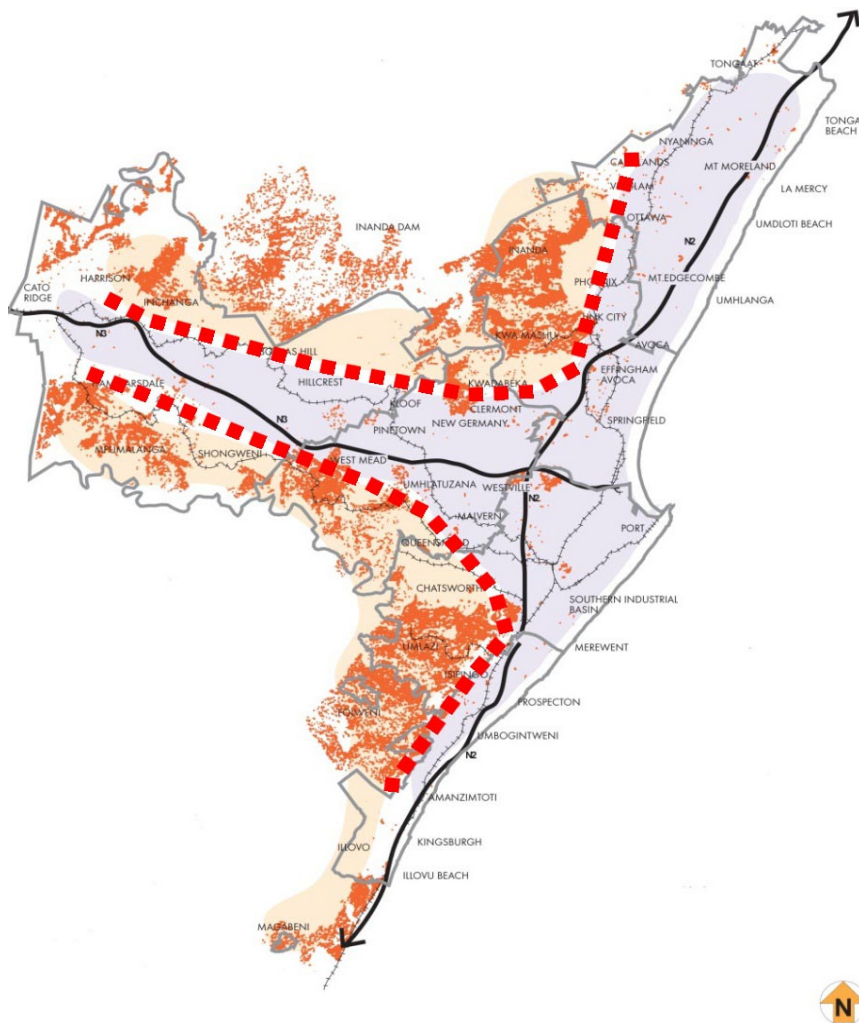
Illus. 2: Sketch: The visual uniformity of urban built form.
Source: Author (2013)



Illus. 3: Sketch showing the ad-hoc image of Durban's Peri-Urban built form.
Source: Author (2013)

compiled by the eThekweni Municipality shows the result of the current rail system which did “much to reinforce the apartheid city”. **Illus. 4** is a map highlighting the Peri-Urban communities shown in orange which are disconnected from the urban core and the plan goes on to detail the problems of accessibility to social services which are predominantly located in the urban core. Peri-urban communities such as KwaMashu, Phoenix, Inanda and Umlazi are clearly separated along thresholds which severs them from the core of Durban.

Identifying the opportunities that public transport could offer, it was the directive of the Local Government IDP to re-activate the public transport geography in Durban and to make use of the extensive rail



Illus. 4: Map showing the disconnected Peri-Urban communities (Orange), main urban corridor (Grey) and Peri-Urban thresholds (red dash).

infrastructure to combat the highly disconnected urban model of Durban's greater metropolitan area. As a result of a drive to remedy the large distance and costs that people in Peri-Urban communities are incurring, it has been planned to upgrade existing public transport network corridors (Naidoo, 2009) and introduce what is now known as the Integrated Rapid Public Transport Network (IRPTN) model. The dissertation questions how it might be possible to introduce the proposed public transport architectural model that aligns itself within the proposed IRPTN plan so as to be realistic.

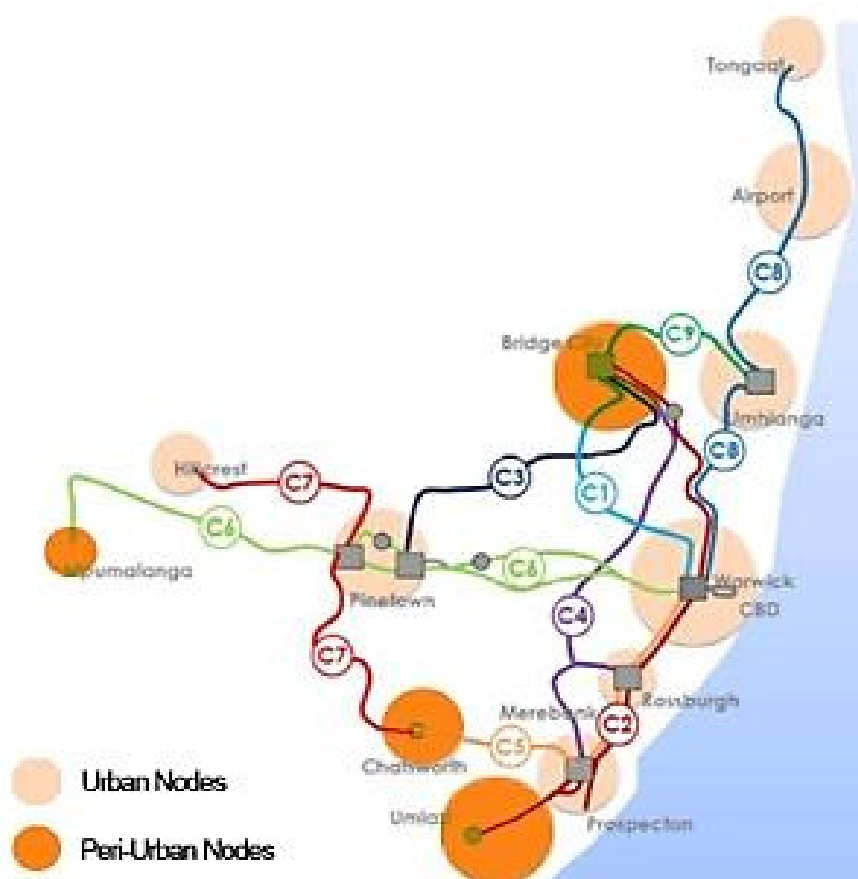
The grounding for the dissertation will be the development of a theoretical framework which will examine the architectural theories related to connectivity which are related to the overarching theory of Otherness. Because of the massive focus which was put on South Africa during its Apartheid era, the precedent studies will focus on buildings located in other Peri-Urban communities around the country which have dealt with the same specific challenges which faced South African during its climate of social disconnection.

As the emphasis of the study is on Durban and how Durban's Peri-Urban communities can be connected back into the urban system, there shall be two case studies, one of which will be in a Peri-Urban community outside of Durban and one in the heart of Durban's urban core. This dual approach is followed to grasp the different manifestations of disconnection between two architectural types which have the same primary function but which are geographically separate.

In summarising, it is important to note that the architectural connection model that this dissertation shall propose will be located within a Peri-Urban community as identified in the IDP and bordered by one of the thresholds as seen in **Illus. 4**.

1.1.1. Justification of the Study

The aggressive segregationist Apartheid urban planning model led to a distinct lack of connection which has resulted in social tensions (Mehrotra, 2012) between people living within the urban core who have direct access to social services and who are considered urban, and those who remain in the outlying Peri-Urban communities.



Illus. 5: Map showing Durban's nodal development which has progressed largely as a result of the Apartheid urban planning model.

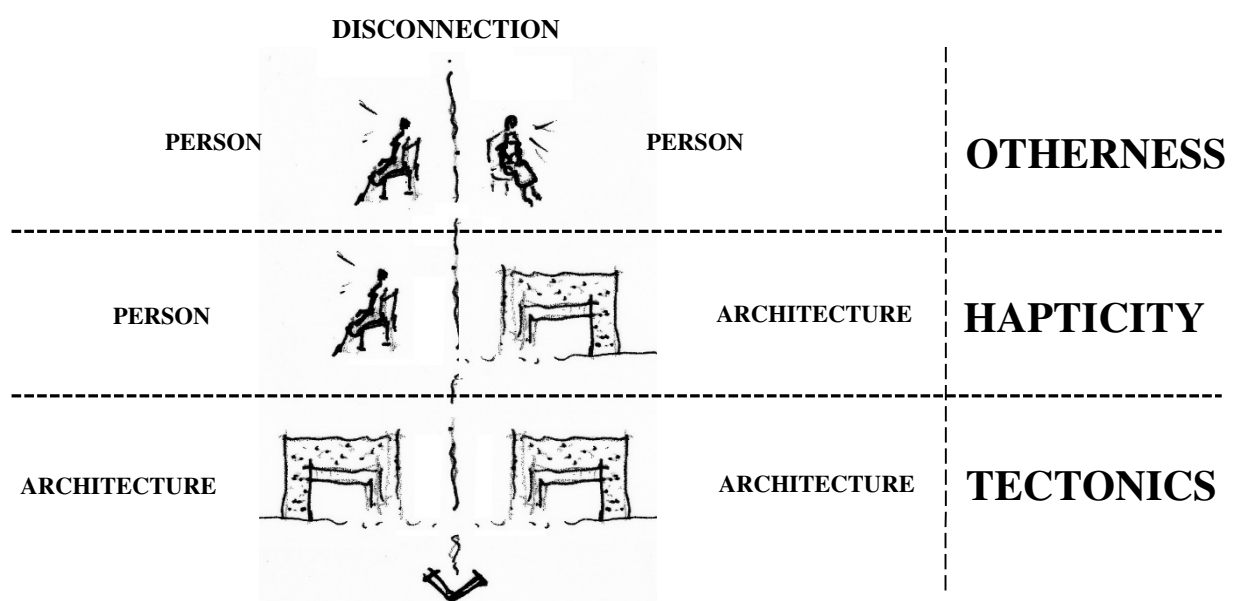
Source: eThekweni Municipality, Procurement and Infrastructure Cluster IDP (2012)

The new contribution which this study intends to make is to provide a dynamic architectural connection model for bridging people living in Durban's Peri-Urban nodes back into the urban network to address the issues of social inequality. The model should align itself within reasonable limits to the cities IDP and in particular the IRPTN plan. The intention is to test the model against one of the nodes which have been identified as part of the national Integrated Development plan of 2011/2012 as shown in **Illus. 5**.

The architectural connection model is taken from a three tier method of theoretical departure. The first will be the primary "Person to Person" connection theory of Otherness. This is an overarching theory which will explain people's perceptions of how they see themselves in relation to people living in Durban's urban environment. The second theory is Hapticity which will focus in on the "Person to Architecture" connection exploring peoples emotional connection to (transport) architecture through the senses. The third and final theory focuses on the "Architecture to Architecture" connections known as Tectonics which will look at how the actual structure of transport architecture can be explored as a connecting mechanism. This three point method of theoretical departure is critical as it focuses on a hierarchy of connectivity from the broad level theoretical down to the detailed physical.

Fig. 1: Diagram showing the Otherness (Top), Haptic (Middle) and Tectonic (Bottom) split.

Source: Author (2013)



The reason for conducting research into an architectural connection model for Durban's Peri-Urban communities is that it can be used as a basis for addressing the numerous problems of constrained urbanisation (Davies, 1976), uncontrolled settlements (Maylam, 1995), and the stigma attached to the notions of the "poor African community" (Mhlaba, 2009) which make up the main problems as a result of disconnection.

By opening a discourse into the possibility of generating a new architectural connection model to address social inequality, the study intends to suggest new alternatives for the transformation from these disconnected identities to a more holistic cultural and economic language within Durban. Additionally, this may offer all people the same opportunities that were taken away as a result of the Apartheid urban planning model. Opportunity exists not only for the inhabitants in Peri-Urban communities but also for the people who reside in the CBD and travel along the main transport corridors such as the Durban-Umhlanga or Durban-Pine Town routes.

It is important to note that the investigation is about affecting the people living in Durban's Peri-Urban communities but also to address the disconnections which people living in the urban areas feel towards these communities. A possible outcome for these urban dwellers includes the ability to socially reconnect with the ways of living and the culture that inhabitants of Durban's Peri-Urban communities practise.

There are intrinsic economic and public benefits that can be gained from an architectural connection model that addresses social inequality in Durban's Peri-Urban communities. Such benefits might include suggestions to how public transport hubs can be better designed to attract a greater number of commuters, thus increasing revenues within the IRPTN framework, densification of land use areas around railway stations (Edwards: 1997) and most importantly acting as catalysts for social and economic development within

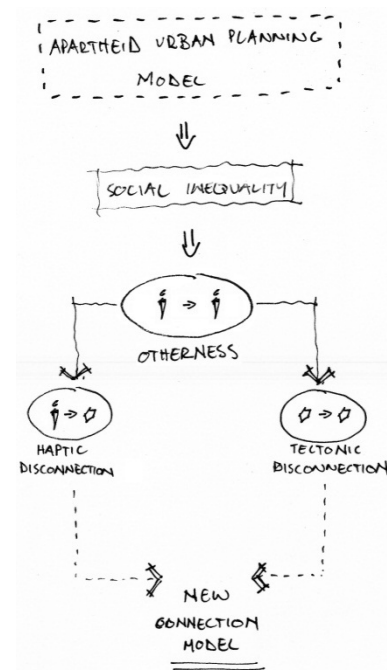


Fig. 2: Diagram showing the cause of the problem (Apartheid urban planning model) results thereof (Otherness) and proposal (New Connection Model) to create social equality.

Source: Author (2013)

Durban's Peri-Urban nodes. There are intrinsic benefits which may result from creating increased interest in socially inclusive public transport hubs. These relate specifically to the proposed IRPTN network and include developments along existing public transport corridors such as the Durban – Pine Town rail link. Another benefit might be the integration of all social classes through the various Peri-Urban nodes such as from Bridge City to the CBD and from Rossburgh through Isipingo and Umlazi.

A solution based on the findings of this study could be of enormous benefit to the educational theory and practise of addressing social inequality through public transport as would be the cultural significance of increased awareness and acceptance. Outcomes from the study should lead to addressing the Apartheid era urban network structures such as the CBD – Pinetown link which would go a long way to create an increasingly cost effective method of travel for poorer people living in the former Bantustan peripheries such as KwaMashu and Umlazi. Further benefits may lead to a new sense of civic value for new station surroundings due to the necessity to travel through areas on feeder route to transport hubs in the proposed urban investment nodes such as Cleremont, Shongweni, Hillcrest and Amanzimtoti. (IDP, 2012:61).

2.0 DEFINITION OF THE PROBLEM, AIMS AND OBJECTIVES

1.2.1.1 Definition of the Problem

When travelling using the current public rail transport network through Durban, there are noticeable manifestations of social inequality between those living in Durban's urban core and surrounding suburbs and those living in the Peri-Urban communities. The clear trend is that the lower income, former Bantustan communities of the Apartheid urban planning model whom now reside in clearly geographically isolated nodes still lack access to basic social services and are therefore far more socially and economically unequal than those residing in Durban's core.

Given the highly capitalist nature of white dominance which surrounded the Apartheid urban planning model, the challenge of modern capitalism still exists (Magubane, 1979:3) which requires urgent attention. By understanding such variations of inequality, it may be possible to create an architectural connection model that un-formalizes the idea of "ruthless transfer of wealth from colonized to the colonizer" (Magubane 1979:3) and further promote cultural and racial inclusivity.

1.2.2 Aims

Within the context of the problem, a central aim of this dissertation is to create a new architectural connection model. The model should act as a mechanism for addressing social inequality within the built environment of Durban's Peri-Urban communities. The dissertation shall further identify a primary location for the architectural connection model within the thresholds which exist as a result of the Apartheid urban planning model.

It is **not** the aim of this dissertation to redefine the epistemological gamut of sociology but rather to highlight reasons for social inequality in Durban and then offer a connection model as a possible solution for addressing social inequality in Durban's Peri-Urban communities.

1.2.3 Objectives

The objectives of the study are:

1. To identify and define the forms of social inequality experienced by people living in Peri-Urban communities
2. To identify and define the parameters of an architectural connection model
3. To examine how best to locate the model within the built environment of the Peri-Urban communities and the existing Peri-Urban thresholds.

3.0 DELINEATION

3.1 Limitations

The research will be limited to:

1. Examining the broad spectrum of the Apartheid Urban Planning Model and focus in on the central issues of social inequality and disconnection bourn within that model.
2. Examining how the spatial geography of the Peri-Urban nodes are connected and their corresponding disconnection.
3. The study will be limited to how an architectural connection model may act as a catalyst towards addressing social inequality within the built environment of Peri-Urban communities.

3.2 Delimitations

This study shall be limited to Peri-Urban nodes whose spatial geography has been determined by Apartheid era urban planning model in Durban. There shall be an investigation into their state of social equality with the possibility of creating a new architectural model with the aim of addressing the manifestations of disconnection. The focus will be on aiding the social re-connection of these Peri-Urban communities into the urban public transport network as through specific imperatives within the proposed IDP for Durban.

3.2 Definitions:

The following terms are mentioned multiple times and they should be made clear to the reader in order to avoid confusion.

Social – Within the context of this dissertation, the term “Social” shall mean the inclusion, integrity and cohesion of people in an economically and racially equitable environment as defined by the South African Social Security Agency (SASSA)

Peri-Urban – Referring to the communities which lie on the periphery of Durban's urban core. The constraints of the term urban are that which generally has servicing capacity and thus opportunity for densification and can support thresholds for a range of services, industry and public transport (IDP 2012/13: 60) as defined by the Urban Development Line (UDL) which is a concept used to demarcate the extent to which urban development will be permitted to establish within the metropolitan area in the long term (IDP 2012/13: 60)

Inequality –The existence of unequal economic opportunities for different social positions or statuses within Peri-Urban communities.

Public Transport – Referring to a shared passenger transportation service that facilitates movement between areas of need and the wider metropolitan opportunities.

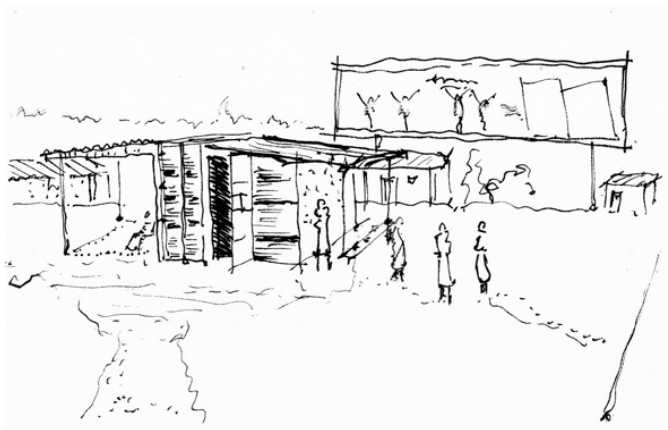
3.3 Primary Questions:

The primary questions which need to be asked are:

1. What forms of social inequality can be identified as a result of the current connection model in Durban's Peri-Urban built environment?
2. Why has the current connection model contributed to the forms of social inequality in Durban's Peri-Urban built environment?
3. How can a new connection model address social inequalities in Durban's Peri-Urban built environment?

3.4 Hypothesis

To investigate and develop an alternative architectural connection model that addresses social inequality in Durban's Peri-Urban built environment.



Illus. 6: Sketch showing the image of inequality – tin roofed shack dwelling in KwaMashu. Source: Author (2013)

1.4 THEORETICAL FRAMEWORK

This dissertation will examine the three key concepts as laid out in the topic and the 3 key connection theories which are critical to achieving the objectives. The flow and order of the concepts and theories is important to understand the final architectural typology. The first step is to look at what the actual social problem is - in this case Social Inequality. The second step is to place the problem in its context of Peri-Urbanism which is the second concept. Once the problem and its place have been fully outlined, the framework of how to address this needs to be examined which is the concept of Connection Modelling. By laying down the strict sequence of Problem/Place/Structure, the 3 main theories can then follow.

The theories are also laid out in a specific order so as to address the order of the concepts listed above. The first theory which is examined is that of Otherness, which is the broad “Person to Person” theory relating to Social Inequality and relates to the “problem” of Social Inequality. The second theory is Hapticity which looks at the “Person to Architecture” connections and the third theory is Tectonics which involves “Architecture to Architecture” connection theory. Both Hapticity and Tectonics thus fall under the blanket theory of Otherness but refer specifically to Architecture and its “place” in Durban.

It is important to note that the framework proposes an architectural solution to a social issue and it is for this reason that the base of the research is rooted in the personal. Once this base is established then the focus of the dissertation moves systematically from the personal through to the architectural. This sequence will be maintained throughout the dissertation with recurring links back to each stage to reinforce the importance of the personal and architectural connections.

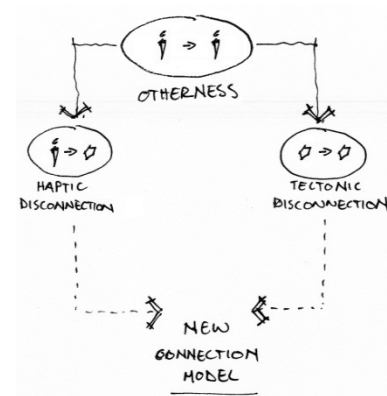


Fig 3: Diagram showing “Person to Person”, “Person to Architecture” and “Architecture to Architecture” concept.

Source: Author (2013)

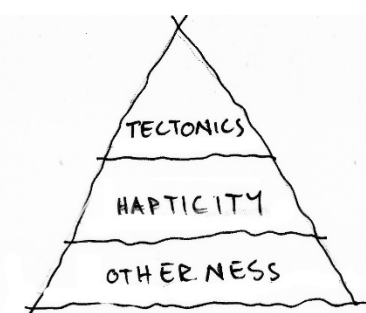


Fig. 4: Diagram showing the overarching theory of Otherness followed by theory of Hapticity and finally the fine grain approach to tectonics. Each theory explains a certain aspect of connectivity. Each theory is separate and distinct but together they are vital in providing a basis for research into how to construct an architectural connection model.

Source: Author (2013)

1.4.1 Concepts

1.4.1.1 Social Inequality

The concept of social inequality is the first concept in the dissertation topic and refers to the main “problem”. It provides one explanation for the disparities that exist with regards to equal opportunities. The dissertation will focus on the disparities in the form of access to social services as a result of Peri-Urbanism from the Apartheid planning model, the areas of which can be seen in **Illus. 7**. As has been documented in the IDP, post-apartheid access to social services such as economic opportunities and social amenities are a prime focus in Durban’s Peri-Urban communities.



Illus. 7: Map showing the homelands location in KwaZulu-Natal during Apartheid.

Source:

U.S. Department of State, *South Africa: Homelands*
(Washington, 1973)

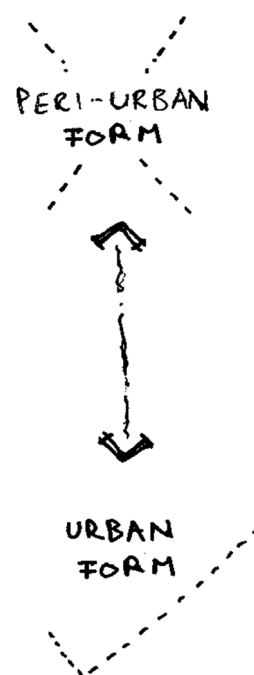
The first concept of social inequality as debated by academics such as Smith, Fair & Davies and backed up by Haymes and Cross and Keith suggest that it has formed as a result of the colonial conquest as defined by Smith (1989: 3) and the forcing of entire communities into a psychological subservience. The second was that of mineral discovery which radically shaped the geographical connections of Bantustan communities. The third was constitutional disenfranchisement which was aimed at preventing any person of colour from having the same rights as whites. These devastating effects of apartheid led to an attempt at complete domination in order to supplement the capitalist needs of the white colonialists (Smith, 1989:4). The architectural connection model therefore needs to address these pertinent issues of subservience and geographical disconnection. This means an architecture that removes any ideas of a strict hierarchy and is highly cognisant of its sense of place within the many constructs of its geographical location.

As can be seen from **Illus. 7**, the homelands formed a type of “constrained urbanisation” (Fair and Davies, 1976) around Durban which resulted in highly dense Illus.s of population to the North and

South West which have become socially disconnected. A thin corridor from Durban to Pinetown was exclusively white and was the main route of industry from the harbour to the manufacturing plants. White areas to the coastal north and south set up strict periferies as noted above for Indians in the Newlands West and Chatsworth areas and finally in the black Peri-Urban areas of KwaMashu and Umlazi to the extreme North and South. Haymes states that “contemporary urban forms are the spacial expression of racialized values” (Haymes, 1995:5) and it is with this racial disconnection in mind that there needs to be a note that Durban can be seen as the “urban realization of the ideology of apartheid” (Cross and Keith, 1993:11). To interprate these issues into a new architectural connection model the following two aspects need to occur:

1. The model must address the qualities of what it means to be urbanised – the forms and connection systems
2. There must be an elimination of any racial preferencing by combining traditional materiality, form and haptic connections of the various demographic groups present along the transport corridors and Peri-Urban communities where the model is to be situated.

The process of addressing social inequality must not only aim to redefine negative perception of the Peri-Urban form by correcting the conditions which give rise to the truth of the theory (i.e. apartheid) but must also aim to create small power centres within emerging towns (Kuklinski, 1977:128). The power centre in this case is the architectural connection model which would further act as a catalyst for the upgrade and supply of social services within these Peri-Urban communities. The comments by Harvey and Kuklinski are significant in that they define how the architectural connection model can address social inequality within these Peri-Urban communities by stressing that the model should act as a catalyst for change. The idea of a power centre should be taken further to include creating a place for economic empowerment for the people that use it and to include a



Illus.8: Image representing the current idea of the negative perception of peri-urban geography and the positive perception of urban geography
Source: Author (2013)

social service component. Given that connectivity is the main issue highlighted in this dissertation, there should be a drive to re-establish the connections for the people within these communities to the actual social services and not just to the proposed IRPTN framework that gets them there.

Social Inequality manifests itself through the built form. This can be seen where the physical scale of housing and structure in the peri-urban communities is far lower than in the urban core with an imbalance between the large scale of the city on the one side of the threshold and the smaller scale of the Peri-Urban dwellings and shacks on the other. There should be more focus on changing the way people living in Peri-Urban communities view the correlation between basic needs and architectural expression, how those needs are expressed through the structures and how these structures can then be linked back into the urban system. **Illus. 9** is an artwork by Jeff Gillette which clearly shows the manifestations of Social Inequality through the eyes of the shack dweller. It gives the notion of the unequal living conditions of the peri-urban whilst the city is represented in a dreamlike oasis, in the distance – unobtainable and enviable with a purity that seems to demean the locale of the peri-urban.

The relevance of the IRPTN and its position in addressing social inequality is important in terms of its ability to act as a cross nodal system. Public transport architecture allows for the reconnection of commuters of all social groups as they travel through the highly disconnected areas of Durban and can offer people the opportunity to commute out, around and through the immediate surroundings of the different nodes, regardless of the dominating social culture of the place. It is critical to focus on the identities of the individual nodes through which the IRPTN traverses when developing the architectural connection model.



Illus. 9: Jeff Gillette (2010) “*Rio Favela*”. USA.

Artwork of social inequality showing the low level expression of the Peri-urban form vs. the high rise morphology of the city. The view of the city is seen as distant and separate.

Source: spf14.com

1.4.1.2 Peri-Urbanism

Peri-Urbanism and the idea of the “place” has gained prominence in architectural studies as in the ESRC paper. “On the Edge of Sustainability: Perspectives on Peri Urban Dynamics”. The term ‘Peri-Urban’ has been used to define ‘a place, concept or process’ (Narain and Nischal 2007: 261) which in this case refers to the urban fringe and the geographic edge of cities as a place (STEPS 2009:03).

In Durban, Peri-Urbanism is most evident at the rural-urban interface which lies along the thresholds between the current CBD and immediate surrounding suburbs and the rural areas outside of the Urban Development Line (UDL). The Peri-Urban is characterised by high population density, large areas of uncoordinated shacks and insufficient access to social services. The built form of the Peri-Urban area is generally low rise with few structures exceeding three stories.



Illus. 10: Sketch showing the high density Peri-Urban hillside shacks in Durban's southern townships. Source: Author (2013)

According to Halkatti, the concept of Peri-Urbanism is generally divided into two areas of thought – place based and flow based. In the first instance, the area is defined based on its geographic location in relation to a certain city centre. A flows based thought refers to ‘flows of produce, finance, labour and services’ and the influence of ‘processes of rapid economic, sociological, institutional, and environmental change’ (Halkatti et al 2003: 149). The areas of Inanda and KwaMashu in the North and Umlazi and Isipingo in the South satisfy both of these criterion as they are characteristic of constantly meta-morphing shack areas juxtaposed with semi-formal commercial and economic hubs which are formed spontaneously based on the direct needs of the area. The problem arises as to how the two urban “places” can be stitched together where they meet. eThekweni Municipality has defined the role of the UDL “to demarcate the extent to which urban development will be permitted to establish within the metropolitan area in the long term” (IDP 2012: 60) and this will inherently have an impact on the form, place and aesthetic of the current Peri-Urban built environment. One of the inherent problems with the concept of Peri-Urbanism is the lack of formal planning structure and therefore it becomes difficult to design for a sense of place as areas are constantly shifting and changing. The Peri-Urban built environment has thus become the focus of government with initiatives to create power centres such as Transport Oriented Development (TOD) nodes within these areas. This helps to focus planning around “urban” centres within the Peri-Urban system against which further development can occur.

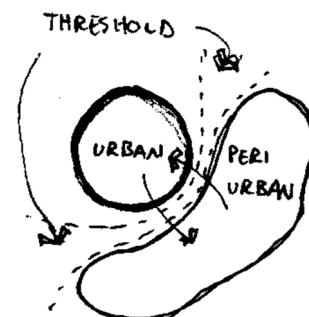
As a result, the shifting paradigms of Peri-Urban areas are becoming more structured and there is an opportunity to explore how these areas could be connected into the encroaching urban core. This is essential if social inequality is to be addressed which has resulted primarily as a result of previous planning methods.

1.4.1.2.1 Peri-Urban Thresholds

Peri-Urban “thresholds” within Durban must be examined as it is critical to understand how a connection model can bridge the social inequality divide between communities. Ideas on thresholds are present in Architect Rahul Mehrotra’s analysis and interventions within the context of India’s peri-urban areas. He notes that *“At the micro level our biggest concern is going to be that of the immense polarization that is occurring in our built environment. The between what we call slums or the informal city and large-scale infrastructure and global architecture is going to set up enormous social tensions in our society”* (Rahul Mehrotra interview May 2012). This is also prevalent in the thresholds that exist in a post-Apartheid Durban where already the architectural language of the inner city and that of Peri-Urban areas such as Umlazi and areas of Phoenix have become completely disconnected. This further manifests in other the strict lines of separation between the transport corridors such as the coastal corridor and the urban hinterland of the Northern and Southern Spatial Development Plans (IDP 2012:72).

Developing these thresholds within the social boundaries of Apartheid’s previous urban planning model are still problematic as can be seen through the sprawling Peri-Urban communities. It should be noted how public transport, which could freely transverse these thresholds, might be able to address social inequality and thus Peri-Urban renewal.

The former homelands of KwaMashu and Phoenix developed with relative independence of each other and of the CBD-Pinetown link which resulted in socio-economic clustering with no direct public transport link to Pinetown or the CBD. Addressing social inequality within a public transport realm in such Peri-Urban areas as these, must look at bridging these past divides if not by land use then by transport. Bridge City lies between Inanda and KwaMashu and is an example of government’s attempts to achieve this. Pillay,



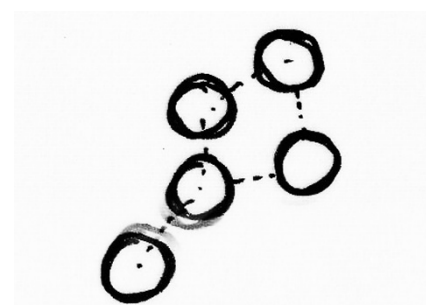
Illus. 11: Sketch showing the concept of a Peri-Urban/urban threshold.

Source: Author (2013)

Tomlinson and Du Toit argue whether the question of spatial planning can actually bring about the changes necessary to support these new corridors (Pillay, Tomlinson & Du Toit 2006:62) and the question thus arises of whether compaction as noted by Robinson and Simone (1998) actually sufficiently addresses the concerns of social and economic dynamics in cities.

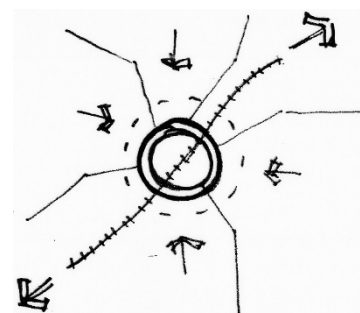
The existence of thresholds has led to the formation of disconnected nodes. To investigate the theory of nodes is not in the scope of this dissertation but there is a realisation that these nodes exist to prompt any brief to be inclusive of people moving between thresholds and of the perceptions created by arriving and departing different socio-cultural zones within Durban. The Bridge City Node which has been designed as a major point of transport and commercial concentration in the north of Durban, it is part of governments' framework of urban rejuvenation to revitalize the corresponding nodes of Warwick triangle in Durban Central, and Umlazi and Isipingo in the south of Durban (IDP 2012). These nodes form the core of the IRPTN framework plan and links back into the IDP through its focus on nodal development.

The IDP acknowledges that transport activities should maintain a nodal focus – that is, they would be clustered around the point of highest accessibility to achieve maximum impact. The purpose of this is to isolate nodal thinking from the Apartheid capitalist notion of gentrification, and attempt a public transport system that respects and delivers amenities, generates economy and rejuvenates and uplifts the immediate surroundings of the node in which it is located. Again this refers back to one of the main questions of how transport architectural connection modelling can address social inequalities in Durban's Peri-Urban communities. This question is critical to fulfil the dissertation argument and supplements the concept of bringing residential, business, work, goods and services, transport, recreation and entertainment opportunities together in one place.



Illus. 12: Diagram representing the concept of connecting nodes.

Source: Author (2013)



Illus. 13: Nodes based on transport should be focal.

Source: Author (2013)

1.4.1.3 Connection Modelling

The third concept is Connection Modelling and lays out the framework for how Social Inequality might be addressed. Scientific modelling begins with certain assumptions. These assumptions allow for the basic modelling that accurately reflects the parts of the system and their relationships. What a model seeks to represent are empirical objects, phenomena, and physical processes that can be portrayed in an abstract, logical and objective way. *“All models are in simulacra, that is, simplified reflections of reality, but, despite their inherent falsity, they are nevertheless extremely useful”* (Box 1987: 424)

Just as the concept of a food chain in nature is used to model the flow of energy between animals where the energy is not directly observable, so the architectural connection model will be used to model the underlying responses to disconnection as a result of the Apartheid urban planning system.

The term connection modelling in this dissertation will thus refer to a system which examines the different theories of connection observed and offer a model by which Peri-Urban communities can use to begin the task of social reconnection.

To understand the two terms connection and modelling, it is necessary to define each in their separate contexts.

The term “connection” refers to the association or relationship by which the observed areas of disconnection i.e. haptic and tectonic relate to the overarching theory of otherness. The concept of modelling however refers to a conceptual representation whose purpose is to explain and predict observed phenomena that are difficult to be observed directly. The observed phenomena in this instance are the haptic and the tectonic disconnections as a result of otherness.

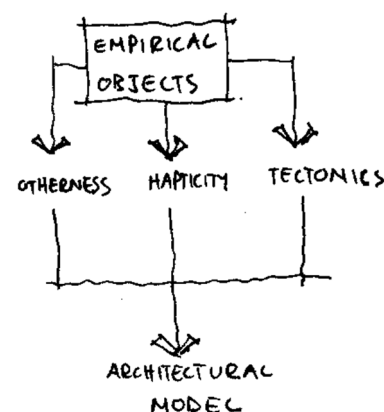


Fig. 5: Sketch explaining the framework of an architectural connection model.

Source: Author (2013)

The intention of the Apartheid planning model was to intentionally disconnect certain groups of people from other groups and there are certain social phenomena which have occurred as a result. These phenomena have persisted into the post-Apartheid era. An architectural connection model allows for these specific phenomena to be addressed through a particular building type where, after studying the theories of disconnection, a possible solution might be recommended.

The concept of using a system of modelling is due to the similarities of social inequality present in Durban's different Peri-Urban communities. An architectural connection model could therefore not act as a total solution to all inequalities but rather as a framework for the community to build upon to address the specific inequalities in each area.

1.4.1.1.1 Model Type vs Model Typology

When dealing with an architectural connection model that can be used in numerous Peri-Urban communities, the difference between model type and typology becomes critical. Giulio Carlo Argan and Alan Colquhoun are pivotal in the investigation of whether it is possible to create a new type or typology.

Argan notes that it is inconceivable that an architectural "type" could be proposed as a standard by which the individual work of art could be valued (Argan 1962) but also admits that architectural typologies have been passed down through generations from one architect to another. He argues that it is important to make the distinct difference between an architectural type and a form of iconography and raises the question of "*How does an architectural type appear?*" (Argan 1962: 564). This raises further questions of how to relate a possible architectural model which concerns formal principles to accommodate the convoluted series of sub identities which make up Durban's Peri-Urban communities. From the Peri-Urban shacks and semi-informal, to the formal built environment together with all the race and cultural

differences as noted in the previous chapters, the model is focused towards a highly abstracted representation which captures the essence of the built place but does not place emphasis on a particular “type”. Many religious buildings such as churches of the renaissance followed a particular typology with regards to planning layout and façade treatment but these buildings were as a result of tradition. Quatremere de Quincy goes on to deny that the possibility of typology should exist as *“all is exact and defined in the model; in the “type” everything is more or less vague”* (Argan, 1963: 243).

It may be appropriate to consider type as dependant on the existence of a series of buildings having between them an obvious formal and functional analogy (Argan 1963: 564). Alan Colquhoun argues that as human beings there is a strong practical and emotional need to “represent the phenomenal world in such a way that it becomes a coherent and logical system” (Colquhoun: 1967). Colquhoun continues to note that *“the purpose of the aesthetic organization of our environment...make it socially available. The resulting organization does not correspond in a one-to-one relationship with the objective facts but is an artificial construct which represents these facts in a socially recognizable way”* (Colquhoun: 1967) From these observations we can argue that it is intrinsic in human nature to analyse the aesthetic of the “place” (in this case Durban’s Peri-Urban environments) and make it socially available to all inhabitants in the place by means of a typology. Given that it is within the vision of the IDP to create a socially equitable environment, it can be argued that a system of social typologies is exactly what is needed for Durban. As much as Argan argues against the formation of an architectural typological constant, he admits that when examining the writings of Bettini and Konig, *“opinion prevails that an architectural type must be treated as a schema of spatial articulation which has been formed in response to a totality of practical and ideological demands”* (Argan 1963: 246). These “practical demands” can be considered as within the framework of the IRPTN and the IDP and are as a result of

the social inequalities that are prevalent in Durban's Peri-Urban communities.

The creation of a new typology is therefore dependant on what the demands of the Peri-Urban communities are imposed to alleviate their social inequality. The critical problem is that because the structure of social inequality is so dynamic, we may need to resort to a typological model for the main reason which is highlighted by Colquhoun. Argan states that *"so long as our classification techniques were unable to establish all the parameters of a problem, it might be necessary to use a typology of forms to fill the gap"* (Argan 1963:254). This notion holds especially true in that the parameters of the problem of social inequality in Durban's Peri-Urban communities are constantly changing as they are not the result of a mathematical creation which can be predicted but rather by variable human intuition.

In summary, in order to search for a way to conduct an architectural connection model, we should note the remarks made by Argan where he concedes the following:

"The conclusion must be that the typological and the inventive aspect of the creative process are continuous and interlaced – the inventive aspect being merely that of dealing with the demands of the actual historical situation by criticizing and overcoming past solutions deposited and synthesized schematically in the type" - (Argan 1963)

It is possible that this can be represented within the context of Durban's Peri-Urban communities where the demands are those of the Apartheid planning model which are analysed and criticized and then overcome through a new emergent architectural connection model.

1.4.2 Theories

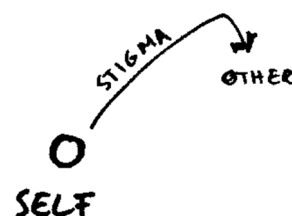
1.4.2.1 Situating Otherness

To begin reconnecting people from one area to any other area, ways that people connect to each other must be examined. After this has been explained and the reasoning for disconnection shown, there will be a context from which the next two theories can follow.

The theory of Otherness is currently used by theorists in many fields of research including philosophy and literature but seldom in architecture. Otherness will be discussed within this context and specifically, Durban's Peri-Urban communities.

The definition of Otherness – as defined by Staszak (2008) is “*the result of a discursive process by which a dominant in-group (“Us,” the Self) constructs one or many dominated out-groups (“Them,” Other) by stigmatizing a difference – real or imagined – presented as a negation of identity and thus a motive for potential discrimination.*” (Staszak 2008: 02) Staszak states that Otherness, (also called *othering*) puts people into two groups: **us** and the **other**. The “us” term is normally the colonizer which creates the norm and the “other” the group being colonized.

In the case of Durban, the us would be the colonial coloniser and its identities (including architectural manifestation) and the other would be the black African community. This theory is reiterated up by Bitterli (1989) who notes that in order to create Otherness, people must classify others as an imperfect version of oneself. This held especially evident within the eighteenth century believers in the “perfectibility of humanity” (Bitterli, 1989: 7). It is argued that this was the case up until 1994 when the dominance and oppression of Apartheid was dissolved and colonial political power was finally relinquished.



Illus. 14: Sketch showing how the “other” is anything stigmatized outside of the “self”.

Source: Author (2013)

Staszak notes “*Out-groups cease to be “Others” when they manage to escape the oppression forced upon them by in-groups*” (Staszak: 2008, 02). The problem remains however that the architecture of oppression still exists in Durban’s urban core and the architecture of the former “other” is still prevalent in Peri-Urban communities.

Disconnection of identity in Durban was one of the primary reasons for social disconnection and inequality which is why there needs to be a concerted effort to dissolve Otherness. If Otherness is to be addressed then the way in which people in Peri-Urban communities see their place in relation to the place of Durban’s urban other must be addressed. The architectural connection model that this dissertation proposes will therefore counter the idea of colonial “perfection” and attempt to establish a new point of reference and identity for Peri-Urban dwellers.

Whitehead argues that “*place is a site of relations of one entity to another and it therefore contains “the other” precisely because no entity can exist in isolation*”. (Harvey 1996: 261). With this in mind we can ascertain that the idea of Otherness lies in all areas of Durban as all areas exist in “isolation”. Whether the “other” is a Peri-Urban dweller viewing western influence as an attempt at complete domination (Smith, 1989:4) viewed by a westerner, both are guilty of using the concept of Otherness as a stigmatized disposition of the idea of the self.

If architecture is to address the forms of otherness prevalent in the mindsets of people in Durban then both the idea of the “perfect form” and that of the imperfect ad hoc dwellings should be reinterpreted. This marks the starting point for an investigation into how people both in Peri-Urban areas and urban centres can relate to and respect their respective architectural forms.

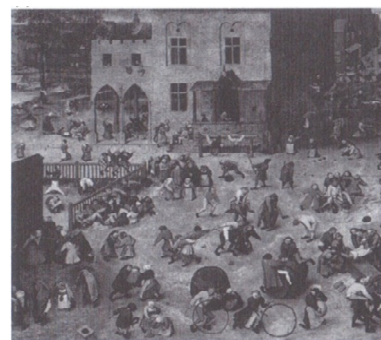
1.4.2.2 Hapticity

Now that there is context and reasoning for the “Person to Person” theory of disconnection in Durban’s Peri-Urban communities, the dissertation shall focus on how the “Person to Architecture” disconnections should be addressed.

Hapticity refers to the sensory connection other than the predominantly visual or ocularcentric character of buildings that people have towards architecture. Hapticity can be referred to as the second tier of the architectural connection model that is proposed in the dissertation.

Juhanni Pallasma describes the development of ocularcentrism of western architecture from “Western ego-consciousness and the gradually increasing separation of the self and the world; vision separates us from the world whereas the other senses unite us with it” (Pallasma, 2008: 25). This is demonstrated in **Illus. 15** where the haptic qualities of touch, smell, motion and taste make for a vivid atmosphere whilst the hard facades of modern cities as seen in **Illus. 16** are devoid of personal sensory qualities. The dissertation refers to reasons why the architectural and urban settings in Durban tend to make people living in the urban core and Peri-Urban communities feel like outsiders when situated in each other’s settings.

In her thesis entitled “Sensorial Ecology: The Hapticity of Site” Kerry Lee (2010) maintains that all human sensory experience occurs within the haptic realm. It is this sensory experience that needs to be made evident for people living in the Peri-Urban communities and an investigation into what sensory perceptions are currently embodied in the architecture of the urban core. If negating Otherness means reinterpreting the perfect form of the city then the models haptic quality should reinvigorate people’s sensory experience of architecture. This new perception is to be tactile. Tuan (1990) notes that the multi-sensory nature of our tactile perception provides us with assiduous percepts of sensual experience; ultimately providing more



Illus. 15: “The City of Participation”

Source: Pallasma 2008



Illus. 16: “The City of Alienation”

Source: Pallasma 2008

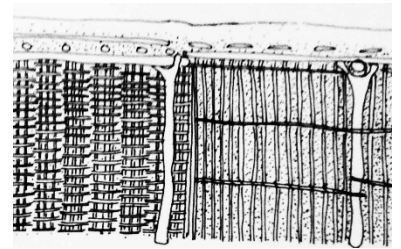
information through this sensation than any other sensory organ (Tuan 7-8). It is for this essential reason that the new architectural connection model in the Peri-Urban communities will convey a new sense of connection through the haptic information of architecture.

1.4.2.3 Tectonics

The third and final theory of tectonics is used to address the “Architecture to Architecture” disconnections. Tectonics focuses on how the elements and details of architecture itself are able show connection both literally and figuratively. This is essential in order that the actual connections of the “other” buildings in the urban core can be studied in order to allow the connections in the architecture in Peri-Urban communities to be able to have a point of reference.

The theory of tectonics focuses on structural detailing and examines how the details are in essence the generator of the form of the building and architecture as a discipline (Frascari 1984). When dealing with cultural differences through Otherness, it is the detail that architects can give harmony to the most uncommon and difficult or disorderly environments generated by a culture. It is through this connective harmony that details themselves can impose order on the whole through their own order (Frascari, 1984).

The theory of Tectonics is discussed with reference to some of the most notable authors on the subject including Kenneth Frampton and Jorn Utzon. The discussion concludes by noting how, with reference to Tectonics, a new typological architectural model can be generated through using the detailing of the new typology as the generator of the form.



Illus. 17: Tectonics examines the connectivity of the basic building elements

Source: Frampton 1995



Illus. 18: Frampton's basic elements of construction as tectonics

Source: Frampton 1995

1.5 RESEARCH METHODOLOGY

1.5.1 Primary Research

A pragmatic, qualitative approach was adopted in the data collection method. Approaches to the questions posed above encompass precedent and case studies that have been chosen based on first-hand experience and similarity in size and function. It was also fundamental to assess the differences which are required to gain a holistic view of the morphology of transport architecture. It was necessary to adopt a direct empirical research methodology in order to engage with people on a voluntary basis which removes the possibility of a bias from the actions and answers of people using the space.

1.5.1.1 Questionnaire

The questionnaire was structured in two parts. The first part focused on user particulars and the second part on how the users interacted with the transport architecture and the feelings associated with those interactions. The structured questionnaire was aimed at ascertaining user's level of connectivity both before and during interaction with the building. The questionnaire was conducted in order to gain a broad understanding of the way in which people experience local transport terminals and interact with them on a physical and psychological level. In order to gain this information, the questions were prepared in a discussion format where any "yes" or "no" answers were backed up with explanations. This was to achieve a more personal and interactive series of responses.

1.5.1.2 Interviews

Interviews were conducted with both users of the terminals, tenants and the terminals management's senior level personnel who have direct knowledge of the workings of the terminals. The range of interviews provides a holistic impression of factors such as socio-

economic status with regards to areas of residence, age, race and gender.

Usage, reason for using the building, frequency and time inside the building was also noted. Effective access was determined by asking about walkability and the likeliness to return to the terminal. Physical aspects such as the terminals connection with user's senses was questioned together with how the building makes users feel with regards to being connected to the greater Durban system and belonging.

1.5.1.3 Observations

In addition to the questionnaire, numerous observations were recorded concerning the physical space and pedestrian movement. Observations were noted over the duration of peak time and from different physical points of reference in order to gain the most objectivity.

1.5.1.4 Case Studies

Two terminals were chosen for the purpose of analysing a building which represents the "other". One building representing the "other" was located in Durban's urban core and one building to represent the "self" was located in a Peri-Urban community. The case studies were carried out by interviewing people who use the building as well as observing interactions with the building at peak and offpeak times to be able to gauge the usability and functionality of the spaces.

1.5.2 Secondary Research

1.5.2.1 Archives

A large range of archives were accessed including manuals, reports and station documentation. It was important to collect these archives from non-biased sources and from different transport personnel. The archives were source from a range of different locations including the station itself, historical records and studies as well as up to date usage statistics.

1.5.2.2 Precedent Studies

Special emphasis was placed on the movement of people both externally and internally through the respective terminals. This gauges how successfully the terminals' promote physical and psychological connectivity between the exterior and interior and between the users and the building itself. The theories of **Otherness**, **Hapticity** and **Tectonics** were used as parameters to analyse both the precedent studies and case studies.

1.5.2.3 Literature Review

The literature review deals extensively with the current theories of connection and the authors and architects who are most prominent. The research and findings deals with the most critical research into the properties of Otherness and the different manifestations of Architectural connection. Once this is complete, the review discusses the relationships between the forms of connection and raises questions about what characteristics a new architectural connection model should embrace in order to address the questions set out in the objectives.

1.6 CONCLUSION

A focused investigation of social inequality as understood in this dissertation has been established to contextualise the literature on the concepts and theories related to the topic. Given that social inequality is diverse, the dissertation focuses on the specific theories of connectivity.

The theoretical review begins with the “Person to Person” connection theory of Otherness which is a vital to understand interpersonal disconnections. The analysis then focuses on the “Person to Architecture” connection theory of Hapticity which examines how people are connected to their specific architecture. Finally, fine grain focus on the “Architecture to Architecture” theory of Tectonics examines the theory behind how architectural connections themselves are manifest. The Literature Review will follow the same process of Otherness | Hapticity | Tectonics to ensure that the process remains structured.

The process of outlining connection theory from both the physical and metaphysical perspectives provides a unique approach in dealing with the problem of social inequality from the theoretical to the pragmatic. The Literature Review will allow for the same structure to analyse the physical and metaphysical properties of connection theory with a conclusion explaining how these relate back to the main problem of social inequality.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

The literature review follows the same format as set out in the chapter relating to concepts and theories namely: **“Person to Person”, “Person to Architecture” and “Architecture to Architecture”**

It has been structured in this way to show how the three connections are inextricably linked and crucial for a new architectural connection model which can then be used to address social inequality in Durban's Peri-Urban communities.

2.2 PERSON TO PERSON - SOCIAL INEQUALITY & THE “OTHER”

The scope of this chapter is to expand on the theory of Otherness and show how it is one of the main reasons for social inequality. It addresses the key question of the dissertation which of why the current architectural connection model has contributed to the forms of social inequality in Durban's Peri-Urban built environment.

Although the spectrum of social inequality is broad and addresses many issues of sociology, critical questions such as those outlined by Beteille (1974: 17) first need to be discussed. The first question is why there is social inequality among people in a post-Apartheid society, secondly the question of where the causes lie and thirdly the issue of whether social inequality can be reduced or even abolished altogether.

Beteille argues that the problem of social inequality has two aspects, the distributive and relational. The distributive refers to the ways in which different factors such as income, wealth, occupation, education, power, skill etc. are distributed in the population. The relational refers to the ways in which individuals are classed and stigmatised by these criteria relative to each other within a system of groups and categories (Beteille 1974: 13). This can be directly related to the

theory of otherness in that it concerns the way in which people relate to the “others” in this case the Apartheid oppressor and how the Apartheid urban planning model was responsible for re-distributing sectors of the economy and communities.

2.2.1 Social Inequality as a Stigma of the Other

Stigma is regarded as one of the main consequences of Otherness which is so prevalent in Durban's Peri-Urban communities. The concept of stigma is generated in many forms and is deeply imbedded within the concept of social inequality. It also has important architectural manifestations in the context of Durban. This section examines the concept of stigma in order to highlight how an architectural connection model can combat otherness in order to address social inequality. **Illus. 19** shows how this stigma manifests into feelings of being distant and unimportant. The loneliness of the house in the deserted landscape is representative of the non-conformist ideology which is all too rampant in contemporary society.

This issue of stigma is addressed by Mhalba in his thesis where he notes that “*indigenous, on the one hand, tends to be limited to rural built environments while, on the other, the economic state of rural indigenous communities across the continent historically associates their vernacular architecture with poverty. That has led to a general understanding of ‘rural’ as referring to an underdeveloped poor African community*” (Mhlaba, 2009:15). Mhlaba is reinforcing the idea of the connection between being Peri-Urban and being poor. The statement also suggests that there is an idea of a connection between being Peri-Urban and being underdeveloped. This kind of impression needs to be urgently addressed as it is the result of an aggressive urban planning model and not the result of the natural development process of urbanisation. It can therefore be concluded that the otherness stigma, if it is to be addressed in an architectural connection model, should strive to dissolve the perceptions of being poor and underdeveloped. This idea can be seen in such works as the proposal



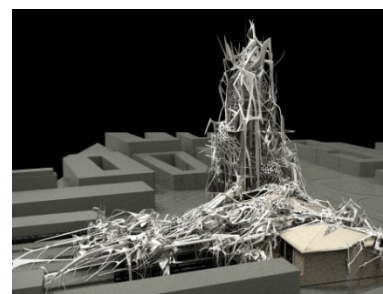
Illus. 19: Image portraying the stigma of the peri-urban other as being distant, poor and unimportant.

Source: 500px.com

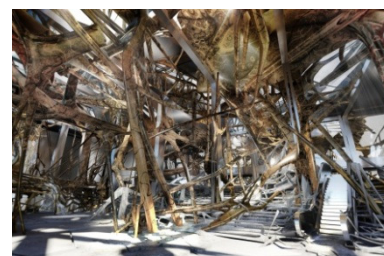
for Vienna's Westbahnhof Station in **Illus. 20 and 21** which captures the idea of being underdeveloped and the formal informal in the form of a building mass. This characteristic of social inequality as a stigma of the other in the architecture of Peri-Urban townships can also be seen in the built fabric. There is the notion that social inequality is characteristic of anyone who does not live in the urban centre and its immediate surrounding suburbs.

This idea of categorizing or stigmatising people in Peri-Urban communities is eloquently stated by Urvig Goffman where he describes our concept of Stigma as *"the means of categorizing persons and the complement of attributes felt to be ordinary and natural for members of each of these categories"* (Goffman, 1963:1). Goffman is referring to stigma as a way of putting a certain category of people into a "box" and all the attributes (including architecture) that these Peri-Urban people are associated with are similarly classified. This is particularly characteristic of the way in which the people of Durban were seen during Apartheid and is something which is critically important to address through the proposed architectural connection model.

One of the particular social inequalities is the lingering issue of Peri-Urban stigma. Goffman notes that *"social settings establish the categories of persons likely to be encountered...the routines of social intercourse in established settings allow us to deal with anticipated others without special attention or thought. When a stranger comes into our presence, then, first appearances are likely to enable us to anticipate his category and attributes, his social identity"*. (Goffman, 1963). This is demonstrated in **Illus. 22** where immediate stigmas associated with the people in the picture are generated based on the informality of their surroundings. In this case, otherness related to stigma is a direct result of the Apartheid urban planning model. It is for reasons such as this that there needs to be an urgent addressing of social inequality by trying to change the way people think about the



Illus. 20: Building mass by Shahira Hammad showing the idea of social decay as a building footprint. Source: excessive-shahira.blogspot.com



Illus. 21: Internal perspective of the building which gives a sense of the formal informal. Source: wordlesstech.com



Illus. 22: The social setting of the informal peri-urban communities immediately stigmatizes the people who move through it. Source: huffingtonpost.com

identities and the “categories” of people who live in these peri-urban communities.

It is important to note then, within the context of the aforementioned text, that in order to create a new architectural connection model which addresses social inequality in Durban's Peri-Urban communities, it must first address the issues which are associated with the socio-cultural stigmas. It has been highlighted that this is a severe form of otherness and moreover, if the stigmas attached to the current public transport system are to be addressed in the proposed IRPTN then focus needs to be given to dislodging the stigmas associated specifically with transport architecture.

2.2.2 Social Inequality and Class of the Other

Social Inequality has manifested in Durban's Peri-Urban communities as a direct result of the Apartheid era of disconnection and separation through creating a strict social class.

The reason for the formation of class structures begins with the colonial oppressor's effort to create a clear class consciousness. If an architectural connection model is to address social inequality then the idea of the Peri-Urban as the lower class has to be dissolved. This idea is shown in **Illus. 23** where apartheid has formed a strict class structure where black people are the other– a social class based on race.

The idea of class itself is argued by academics such as Vanfossen (1979) who gives some reasons for this formation of classes. He notes that social class within a society forms when an individual perceives a common interest with others who share economic and social circumstances (Vanfossen 1979: 232). He further states there are three conditions which must exist for this to occur: Firstly individuals must identify themselves with the class or stratum to which they belong, they must then identify with others in the same stratum and lastly they must feel separate or distinct from those in other strata. This is characteristic of what happened in South Africa during Apartheid where people of colour identified with others of the same colour, where work and jobs (such as in **Illus. 23**) were common and where they were distinctly separate from the western influence.

It should be argued then, that if the idea of otherness is to be addressed in an architectural connection model, it should aim to completely remove the conditions mentioned above and ultimately dissolve the ideas of separate stratum and class.

Whilst issues of social class within the South African context can be debated, the effects on situating otherness in a post 1994 era need to be noted in relation to the built environment. If social class is



Illus. 23: An image of a white woman being carried by her slaves. This is a direct representation of the horrific apartheid style social class.

Source: Metalivros, 2003

characterised by differential treatment based on class, then classist architecture can be defined as architecture that ranks people and strengthens the social divisions according to economic status and perpetuates social inequality. This is significant in addressing social inequality within an architectural connection model as class connections are centrally relevant in Durban given its divisive history. Hendrix (2009) makes a further contribution to this argument about how classism can manifest in architecture. He states that architecture at its best is a reflection of the human psyche and it is the quest for the physical aesthetic of architecture to represent the connection between elitism and equality to best deal with the perceptions of class. (2009: 01)

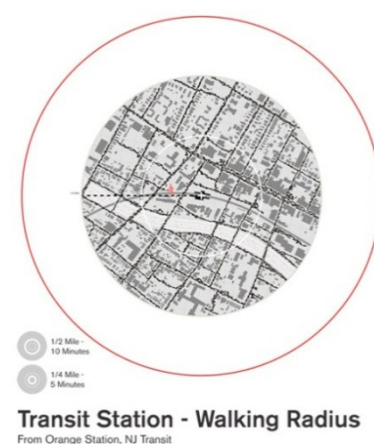
Vanfossen notes that a social class is made up of a group of with similar economic conditions and life styles, who interact with each other, maintain exclusive boundaries, are conscious of their common group membership and are separated by clearly obvious degrees of social distance from other groups. This can be seen in all spheres of living, from the informal to the formal. Michael Meredith and Hilary Sample of MOS show a typical type of social grouping in their proposal for a mixed use development in Oranges, NY as seen in **Illus. 24**. The concept is one of locating people based on their living conditions and requirements for being walking distance to the nearest transit station. **Illus. 26** shows clearly the similarity and homogeneity of the jagged floor plan development is a contemporary version of upper classing.

Vanfossen's point of reference is significant in the theory of otherness within the Durban's Peri-Urban communities as it suggests that any architectural model which aims to dissolve social inequality and classism must address the notions of disconnecting boundaries, eradicating the idea of elitism through group memberships, and remove the social distance from the former Apartheid oppressor – in this case the architecture of Durban's urban core.



Illus. 24: The idea of class structure is clearly indicated by similar lifestyles.

Source: MoMA.org



Illus. 25: Classing based on economic conditions of transit station proximity.

Source: moma.org



Illus. 26: Classing based on strict floor boundaries of the development.

Source: moma.org

The architectural connection model concentrates on how the negative effects of a social class within transport architecture can be eliminated and readdress the main question of how a new connection model can address social inequalities in Durban's Peri-Urban built environment.

Extensive research has been devoted to social class in South Africa and it is vital to note how these economic classes might impact on a new architectural connection model. Magubane (1979) notes that the main aim to counter the ideological illusions (Magubane, 1979:243) of apartheid systems should have a rejuvenating effect on current rural Peri-Urban geographies which is critical in addressing social class in the nodes which exist within the IDP. **Illus. 27** is characteristic of the Apartheid era class planning for Peri-Urban communities. The practice of social class planning was adopted as part of the urban planning model to create a strict hierarchy of class structures for the former Bantustan communities. This led to highly disconnected classes from the urban core and it is the very idea of disconnection that is central to the theory of otherness.

The Nationalist Government's approach during the Apartheid era was an attempt to realize a discriminatory national identity taken to the extreme by instating a form of ethnic cleansing and the creation of disconnections through the often violent expulsion of blacks who were essentially considered "non-nationals". This is demonstrated in **Illus. 28** and is considered social inequality in the form of racial Otherness. In order for an architectural connection model to address social class, its architecture should address some important issues; the model should aim to address the former Bantustan communities directly, secondly, it should address classism as a means to deal with the manifestations of disconnection and lastly the model must aim to eradicate the notions of people within the Peri-Urban communities as being "non-nationals"



Illus. 27: Geographic segregation created strict social classes.
Source: Apartheid Museum Archives



Illus. 28: Extreme use of racial otherness to create social classes in Apartheid South Africa.
Source: africanhistory.about.com

In order to counter the theory of otherness through social class, any attempts at an honest architectural connection model must re-evaluate what it means to connect people and their architecture in an inclusive and socially moral way.



Illus. 29: Woods' vision presents an original perspective on the built environment — one that holds high regard for humanity's ability to resist, respond, and create in adverse conditions". The architect's images depict a serene aftermath of a once tremulous time. A new cohesion can be a thing of beauty even after events which leave seemingly devastating consequences.

Source: SFMOMA.com

Architect Lebbeus Woods shows in **Illus. 29** that he seeks to tackle such issues of disconnection and integrating classes by constantly probing architectures potential to transform the individual and the collective. The idea that disconnected social classes can come together to form a new whole with a sense of beauty that transcends the sum of the parts is central to the idea of addressing social inequality.

Prime Minister D.F. Malan touches on this social disconnect when he wrote in response to an American clergyman that: *"The deep-rooted colour consciousness of the white South African rises from the fundamental differences between the two groups white and black. The difference in colour is surely the physical manifestation of the contrast between two irreconcilable ways of life, between barbarism and civilisation, between heathenism and Christianity and finally between overwhelming numerical odds on the one hand and insignificant numbers on the other"* - (Malan 1954)

It is clear that this type of apartheid rhetoric, was aimed at creating a crippling socially disconnected class. Any proposed architectural connection model within the Peri-Urban communities must not exclude in terms of race or religion, perceived “civil” ideologies or as a result of any number of population demographics but must be inclusive of all of these criterion if it is to address otherness.



Illus. 30: The problem of a how to create a public transport architecture that is equitable to all classes. It is clear that class divides around public transport stations have occurred as a result of the socially divisive architecture of the past. A new architectural connection model must address the challenges of whether to allow all social classes equal opportunities within it or whether to create a platform which favours the previously disconnected class. The ideal equity solution is seems, is a combination of both.

Source:

espressostalinist.wordpress.com

The finest grain issue in dealing with social class in the context of otherness is within the provision of public transport itself. **Illus. 30** raises the question of how to formulate a new architecture that addresses the social equity divides created by the architecture of the past. Todd Litmans paper on *Social Inclusion* states that as a Transport Planning Issue, there are three distinct ideas which need to be understood in the context of the effects of social connectivity in South Africa. The first is known as horizontal equity or fairness (Litman: 03) and concerns the relationship between ticket cost and benefits received. Because there are numerous fee structures within

the public railway networks based on service, there exists the problem that “what you pay for is what you get”. This undermines the notion of public transport being the ultimate social leveller between classes as the upper class are always able to remain distinguished during the duration of the journey. The opposite of horizontal equity he terms vertical equity, which provides the greatest benefit at the least cost to users who live in areas which are socially disconnected and reduces on a sliding scale as the social class becomes higher. The third is vertical equity with regard to Mobility Need and Ability and deals with the belief that everyone deserves a basic level of access to public transport even if the disabled require extra services.

These are all vital issues that should be dealt with when envisaging a new architectural connection model that addresses social class. It is clear that within the framework of otherness, social class and social inequality are inextricably linked and must be the focus of the connection model.

2.2.3 Social Inequality through Poverty of the Other

Poverty and social inequality are part of the makeup of the theory of otherness, as Berthoud (1976) notes: *“poverty is primarily concerned with the simple idea of some people having less than others – the “others” being either the average or the comparatively rich with the reference point is other members of the same society.* (Berthoud: 1976: 17). This is depicted in **Illus. 31** which shows the legacy of poverty in South Africa during apartheid. It depicts the simple notion that social inequality and poverty are revealed in the architecture of the other. Berthoud further notes that *“deprived localities contain deprived people and that alleviation of problems affecting an area will have a beneficial effect on its inhabitants”* (Berthoud: 1976:150). With this idea and reference to social inequality, he notes some reasons why areas in poverty suffer from social inequality and this helps to answer one of the main questions of the dissertation of why



Illus. 31: Poverty of the other is expressed through the architecture of the other.

Source: cosatu.org.za

the current connection model has contributed to the forms of social inequality in Durban's Peri-Urban built environment.



Illus. 32: Poverty in an area is easily identifiable. Given that social inequality and poverty are linked, an architectural connection model should seek to address areas which are poverty stricken. If areas of poverty are targeted then social inequality is also addressed.

Source: google earth.com

Berthoud (1976: 150-151) states that a deprived area is easily visible to the naked eye and such areas afflict the public conscience. He notes that there are administrative and conceptual advantages in deciding on a concentrated action programme to solve the problems of a particular locality. Whilst the problems of such places are intrinsically problems of the area, many of the issues can be resolved through area based action. This refers to actions that can help all the people in the area affected and not just the worst off and to take such action where the greatest number of sufferers are found.

Berthoud contends that if deprived individuals or households are indeed heavily concentrated into particular localities then solving most of the problems in such areas will help most of the deprived people. These are simple but critical points which have to be considered when choosing the site for the proposed Transportation Hub within the Peri-Urban communities.

The five points mentioned above have important bearing on the structure of social inequality in Durban's Peri-Urban communities and offers insight into the causes of deprivation. Vanfossen substantiates

this by noting that *social inequality is in essence any evaluated social distinction among individuals or groups*. (Vanfossen 1979: 5).

To deal with poverty an architectural connection model must, at its base deal with the process of social differentiation which can ultimately be defined as the perception of differences in individual's social positions or groups. As has been mentioned in the previous chapter, Durban's Peri-Urban communities are characterized by this process of social differentiation and the perception of poverty can be seen as a result of social stratification (Vanfossen 1979: 6). Ultimately it is the issue of economic inequality that is the prime generator for poverty which is why the architectural connection model must strive to address otherness on an economic level. Vanfossen continues that *"once economic inequality has taken hold in a society, political control is utilized to maintain and perpetuate the privilege. Wealth may then become very unequally distributed"*

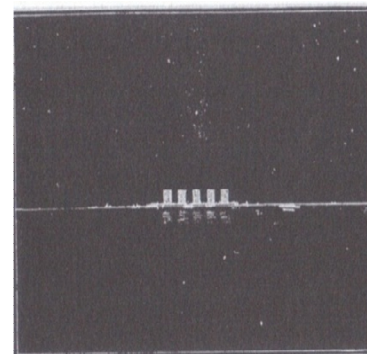
In conclusion, it is essential to note that an architectural connection model must act as a catalyst for economic development in the Peri-Urban communities. This has been demonstrated by the authors discussed above and is necessary to address otherness. Berthoud highlights that when analysing the way in which economic inequality can be addressed, there are three primary concepts which must be adhered to: The standard of living, the quantity of goods and the services that can be bought by people with their income. These three factors be considered to alleviate what he calls "unnecessary inequality" Berthoud (1976: 17) and critical is that we must consider not only the deprived individuals but also the groups and the links between them.

2.3 PERSON TO ARCHITECTURE - PERI-URBAN HAPTICITY

2.3.1 Towards a Peri-Urban Haptic Identity

As noted in her thesis entitled “Architecture and Identity” Davis notes that “National identity is not a natural attribute that precedes statehood but a process that must be cultivated for a long time after a regime has gained political power. Identity is not something architects or urban designers have complete control over or something that they can firmly mould, as all architecture and the symbolism expressed in it is subject to interpretation”. (Davis, 2007:32). It is this question of what a haptic connection might be for Durban with respect to the highly subjective nature of the different cultures and designers that needs to be addressed. This leads us along a path to unpack what identity connections exist, within the socio-political context of Durban and refers back to the question of what forms of social connection can be identified and defined through current transport architecture in Durban’s Peri-Urban communities. Davies further states that “in-order to create an architectural identity which is reflective of all cultures, one must resort to some kind of abstraction; yet if a building is too far abstracted from any known reference points, it may be resisted, resented, or even ignored” (Davis 2007:33).

In the case of the proposed architectural connection model, the reference points are the haptic connections which are to be analysed through the case studies. **Illus. 33** portrays the ocularcentric city of the eye (the city at a distance) vs. the “haptic city” up close in **Illus. 34**. What Pallasma is portraying is that in order to achieve hapticity we must take into consideration the other sensory elements which can only be felt on a personal level with the built environment. The closeness and intimacy which is felt in the **Illus. 34** is as a result of the environments ability to show off its textural, auditory and sensory characteristics. These other senses are what an architectural



Illus. 33: The “city of the eye”

Source: Pallasma 2008



Illus. 34: “The haptic city”

Source: Pallasma 2008

connection model for Durban should address through density and a strong personal experience with the architecture.

Within the built-environment of Durban's Peri-Urban communities, there are large areas of informal settlements which are increasing on a daily basis as seen in **Illus. 35**. As synonymous as the traditional wattle and daub architecture is with South Africa, the unique landscapes that are created by the shack forms within Durban's Peri-Urban communities require that we address these new landscapes as a complimentary addition to the existing forms of local architecture that exists. The Peri-Urban shack offers a plethora of colours and haptic qualities that can be incorporated within the architectural connection model. Use of tin, wood, mud and a variety of paint colours are used as can be seen in **Illus.s 35** and **36**, which is broadly as a result of the different locations from which the materials were found. Junk yards, construction site and material surplus stores all provide suitable building materials which can be used to construct a Peri-Urban shack. It is the basic needs of the dweller that are the primary concern and this often results in various building methods and construction techniques. Although there is an on-going action to address the increasing problem of shacks, their intuitive Hapticity may be seen as a catalytic opportunity for an emergent architectural aesthetic that strives to be representative of the total built environment of Peri-Urban communities.

One of the central problems with trying to link the haptic qualities of the Peri-Urban communities, from the informal Peri-Urban shack to the inner city urban formal style, is that Durban has a strong tradition and contemporary links with western architectural styles, which often have strong connotations with Apartheid such as the Deco building seen in **Illus. 37**.

The relevance of the classical western colonial architecture up to the 1930's has impacted on the creation of an idealised identity for



Illus. 35: The Peri-Urban haptic informal settlement as a negative stigma of the peri-urban form.

Source: Author (2013)



Illus. 36: The basic need for shelter results in a dynamic use of materiality

Source: Author (2013)



Illus. 37: The identity conundrum of historical respect vs. apartheid precedent:

Source: users.iafrica.com

Durban. It speaks of history, of both cultural and economic be that in a positive or negative light but the vast majority of these western architectural trends remain undiluted in the city centre such as the old Durban railway station. It is this unique connective conundrum that Durban must seek to define and by portraying contemporary issues through a haptic architectural model in Peri-Urban communities. The question arises of how to acknowledge tradition and portray an architectural typological model that in itself contains a strong haptic identity and how in particular transport architectural connection modelling can address social inequalities of identity in Durban's Peri-Urban communities.

The bold geometric shapes and visual arts style of the Deco period in Durban are in some ways similar to the bold haptic qualities of the most informal settlements within the Peri-Urban communities. Both make use of vibrant colours and shapes and there exists an exciting opportunity to create a haptic style which captures both essences of these types of architecture. When looking at the materiality of the Warwick triangle precinct as seen in **Illus. 39**, there is a rich array of haptic materials which are present in areas such as the pedestrian walkway bridges and stalls. This shows attempts to fuse the urban and rural materials to create a rich style which exudes a strong haptic quality. It is this highly textural quality that the new Peri-Urban model should attempt to capture.

2.3.2 The Culture of Peri-Urban Hapticity

It is not the intent of this dissertation to offer insights into cultural movements through cities. Rather, it is critical to examine the growth of cultural groups within the context of the greater Durban city to gain an understanding of how cultural thresholds can be transitioned by introducing a mass rapid transport architecture. Tolerance is important to consider if there is to be any attempt to create an



Illus. 38: The bold shapes and haptic qualities of Durban's urban Art Deco architecture
Source: africanphotos.gm



Illus. 39: Durban's alternate haptic elements of Warwick Precinct
Source: informalcity.co.za

architectural connection model that addresses social inequality from a culturally connected perspective.

As noted by Marx and Charlton, Durban's municipal authorities were unable to keep pace with the burgeoning urbanisation needs of African households and massive informal settlements such as Cato Manor, which were developed in the 1930s within the cities Peri-Urban communities at the time (Marx & Charlton, 11). With the rise to power of the Nationalist Party in 1948, the group areas act came into being and the beginning of racial segregation gained strength.

As a result of the forced removal of people of colour from the city centres there was a heightening of cultural and racial consciousness towards territory. It is this consciousness of racial and cultural disconnection that a new emergent socially inclusive architecture must endeavour to address. In Peri-Urban communities, any urban renewal should be centred on efforts which aim to counter the socio-cultural disconnections evident as a result of the group areas act. The self-governing (Marx & Charlton, 11) areas of KwaZulu ultimately resulted in further urban sprawl and greatly increased public transport travel times for residents attempting to commute into the city. It was only when the township of KwaMashu within the KwaZulu homeland was included into the greater Durban Area in 1994, that true racial and cultural urbanisation began to dissipate within an institutional context (Baars, 03). In conclusion, we note the following text from Lawrence Schlemmer Valerie Miller from their paper on Informal Peri-Urban Communities which addresses the cultural concerns most heavily expressed by those living in the Peri-Urban informal sector:

“The chief attitudinal concerns of the informal sector are to become less marginal and to gain closer access to the urban system. They have problems of adaptation in the formal system as reflected by the substantial proportions of people who have withdrawn from it into Peri-Urban areas ... their integration into the urban system is their major concern” (Schlemmer & Moller 1982: 26)



Illus. 40: An inclusive architecture must counter the apartheid era of territorial disconnection

Source: wild-about-travel.com



Illus. 41: Informal Cato Manor prior to the removal to Kwa-Mashu showed a similar adhoc materiality for basic needs

Source: cmda.org.za

2.4 ARCHITECTURE TO ARCHITECTURE – CONNECTING TECTONICS

2.4.1 Tectonics as Peri-Urban Metaphors

Jorn Utzon's thoughts on transcultural form and tectonic metaphors influenced those of Kenneth Frampton who is the acknowledged architectural expert on the field. John Cava notes that Utzon had a *"profound feeling for an inflected landscape shaped by topography, climate, time, material and craft, and hence for an architecture engendered in large measure by natural forces"* (Cava 2001: 250). Tectonics honours the art of building architecture and this quotation speaks of the forces at work which shaped the way in which it is built. Building a connection model that can be used in Durban's Peri-Urban communities should take on these similar influences within the Peri-Urban place if it is to truly express the tectonics of the place. Kjeld Helm-Petersen comments of Utzon's work is obvious in his quote relating to the Kingo housing project: *"His houses grow, like organisms, they reflect the form of nature's growth, they are not theoretical frameworks for human life but live their own life because they are structured according to the same physical laws that govern their inhabitants"* (Cava 2001: 250) This begins to describe how the construction of the built environment can start to take on metaphorical impressions of nature and the surrounding context. It has been argued that in today's world it is the lifestyle that is the greatest metaphor and catalyst for architectural design. Utzon notes that some architects *"come from a school of thought that holds that architecture should embody the framework for this lifestyle"* (Cava 1996: 252).

In contemporary transport terminals the driving criterion for design is function and the metaphors are seemingly becoming more a sign of a building as Frampton notes: rather than a "thing". In his *Rappel a L'ordre, The case for the tectonic*, Frampton argues that *"the essence is the poetic manifestation of structure implied"*. His commentary

forces the construction of an architectural connection model to ask the questions of what the structure should be, how it should be assembled, what clues it takes as a manifestation of a built thing and how the building materials relate to each other and from whence they came. It is argued that the built form of the Peri-Urban in Durban has a vast integrated system of tectonics and no one typology prevails and offers right back the question of how the tectonics for a “model for design” might relate.

2.4.2 Tectonic Identities for Peri-Urban Communities

The purpose of tectonics is to aid in establishing a connection to the detailing and jointing of surrounding architecture and ultimately to society and Durban's urban environment as a whole. By using tectonics as a binding mechanism to create an identity, Davis notes that “in order to create a unified identity architectural identity, which is reflective of all cultures one must resort to some kind of abstraction. This is critical in that if a building is too far abstracted from any known reference points, it may be resisted, resented, or even ignored” (Davis 2007:33). It is this concept of a regional identity that the IRPTN framework seeks to establish and that the architectural connection model which is intended to be formulated must be located within that plan seeks to address.

Gottfried Semper (1851) approaches the idea of tectonics on an ethnographic level by simplifying architectural form down to its most basic elements namely (1) the earthwork, (2) the hearth, (3) the framework/roof, and (4) the lightweight enclosing membrane. If an architectural connection model for reconnecting Peri-Urban communities back into the urban whole is to be proposed then these essential forms should be interpreted according to how Peri-Urban communities view these elements and what archetypal renditions are evident in the city centre. Semper proposed that there are essentially two basic modes of building, the compressive mass and the tensile

frame (Frampton, 2001: 13). These opposing methods have been used interchangeably and numerous throughout time by various cultures. An example of this can be seen in the Japanese culture where weaving and binding are the primary methods of creating structure as well as in African culture where the woven reed is used extensively in wattle and daub huts. The architectural connection model draws on similarities between how people living in Peri-Urban communities have used their own metaphorical styles of basic compressive mass and tensile construct.

Throughout modern times, the concept of identifying the connections of the joint has been emphasized by architects such as Carlos Scarpa and is evident in his renovation of the Fondazione Querini Stampalia in Venice as seen in **Illus. 42**. The concept is of an earthwork which is levelled into a concrete tray that returns up the walls to meet what appears to be hinged wood but is simply another rendition of stone. The use of brass rails suggests reeding (Frampton, 2001: 302) which is articulated to form a type of cabinetwork but which is all cut stone.

The Fondazione Querini Stampalia is an excellent example of an architecture whose tectonic identity is expressed through the honouring one of the basic elements of architecture, the joint. Building elements of different materials have been capped to emphasize their placement and each structural element, whether it be part of the floor, wall or roof soffit is expressed. The building is an honest sum of its parts which gives a genuine expression of purpose.

Relationships can be identified between the proposed architectural connection model and the identified joints evident in the communities which the model intends to be situated. This justifies one of the central questions of how transport architectural connection modelling can address social inequalities through tectonics in Durban's peri-urban communities.



Illus. 42: The Fondazione Querini Stampalia by Carlos Scarpa
Source: Frampton 2001

If the dissertation is to address the question of how to create a tectonic identity for the peri-urban and link this identity to the encroaching urban fabric, then the tectonics sequence from urban to peri-urban should be examined. **Illus. 43** is a typical image of the attempt at a modern architectural tectonic throughout the Durban CBD with overhanging down stand beams and curtain walling cover the true connecting mechanisms for the majority of the buildings. The overall effect is cold hard combination of slabs and boxes which dissipates however as one moves out into the CBD peripheries where the tectonics become simpler and more visible as seen in **Illus. 44**. The human scale is greatly enhanced which increases the connective appeal of the architecture. **Illus. 45** is indicative the shack housing commonly found in Durban's peri-urban areas. It is the most intuitive expression of tectonics as the connections and materiality are clearly and cleanly articulated. The dilemma is that this literal tectonic identity has resulted in an architecture that is considered undesirable and an expression of poverty and social inequality. Whilst the different building elements are beautifully revealed and the scale of features directly suited to the inhabitant, the overall picture is synonymous with squalor and grime. It is this disconnection between the honesty and appeal of tectonic realism and the undesirable effects which it currently creates in the peri-urban communities that the new architectural model should address.



Illus. 43: The pseudo connections of heavy and light make up a large majority of the tectonics of the CBD.

Source: galetti.co.za



Illus. 44: The CBD peripheries begin to portray a tectonic honesty which results in a more appealing human scale. Source: flickr.com



Illus. 45: The typical peri-urban shack has the highest level of tectonic identity but the resulting architecture is a picture of social inequality.

Source: flickr.com

2.5 CONCLUSION

In keeping with the structure of the dissertation it is clear from examining the “Person to Person” connection theory of otherness that social inequality is directly associated with stigma, class and poverty. These are the interpersonal concerns that form the basis of the problem and a new architectural connection model must strive to address these issues. The “Person to Architecture” theory of Hapticity shows the critical importance that Identity and Culture play in deciding what materiality and form the structure should take. Finally, the “Architecture to Architecture” connection theory of Tectonics highlights that there are metaphors and identity issues which have to be tackled for an honest and truthful tectonic expression which does not result in an image of undesirability.

The issues emphasized in the literature review form a strong framework for examining the precedent and case studies. The review reveals the need for a full examination into each level of connection theory for individual buildings rather than analysing a single theory per building. This approach is important as the architectural connection model will need to engage each of these connection theories in parallel if it is to successfully address the problems of disconnection associated with social inequality.

One cannot assume that one level of connection is more or less important to consider than the other as they are all interrelated and are based on scale and discipline specificity. The level of personal connection between users of the buildings may be directly attributed to the materiality of the space and vice versa. There are also correlations between how Hapticity can be created and affected by the tectonic connections which the individual elements generate. It is this association between the connection theories that creates an interesting dynamic from which to begin looking at the precedent and case studies.

CHAPTER 3: PRECEDENT STUDIES

Introduction

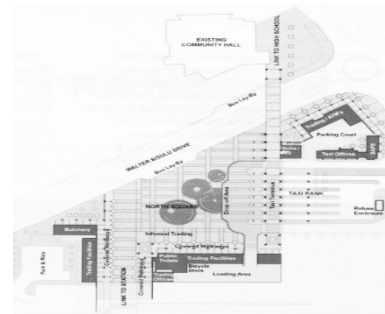
The three precedent study buildings exhibit characteristics which are concomitant with the research topic. The focus for each study will be on how the respective terminal buildings have engaged with the theories of otherness, hapticity and tectonics. In the conclusions there will be a summation of the buildings effectiveness in addressing social inequality and any manifestations of connection which can be noted.

3.1 KUYASA SQUARE TRANSPORT INTERCHANGE

Meyer + Vorster Architects, Cape Town 2009

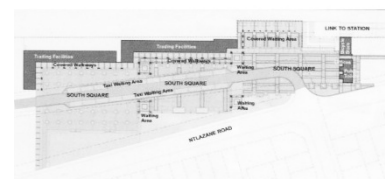
3.1.1 Introduction

Kuyasa Square Transport Interchange is located on Walter Sisulu Road in the Peri-Urban Cape Flats. Opened in 2009, its location and context immediately draws similarities to Durban's Peri-Urban communities through the low level built landscape and low levels of access to social services such as those found in the inner city of Cape Town. **Illus.s 46** and **47** show the large street frontage which the site enjoys and **Illus. 48** highlights the interchanges focus on human scale. Designed by Meyer + Vorster Architects, the station comprises two main spaces which flank a central railway line and the design aesthetic was to act as a functional response to a critical need of transport access. A driving parameter for the station was that the residents of Khayelitsha should be connected to the same level of services as those living in the central urban core – as stated by Tiaan Meyer, the planning partner at Meyer + Vorster. This need for connectivity is critical and parallels one of the main concepts of the research topic.



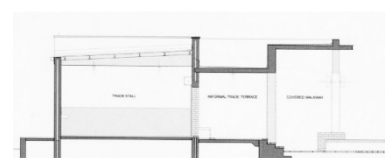
Illus. 46: Plan showing the large street frontage.

Source: ASA Journal



Illus. 47: Plans showing the maximisation of interpersonal connectivity via street traders in dark grey.

Source: ASA Journal



Illus. 48: Plans showing the low level intimacy of the building.

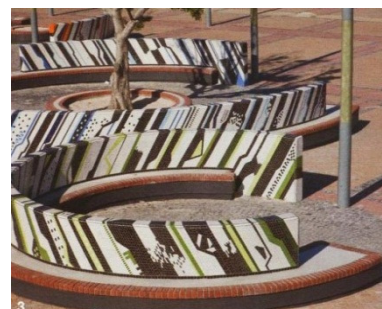
Source: ASA Journal

3.1.2 Addressing Otherness

As has been noted in the chapter on Otherness, the location of the Kuyasa Station Square and Transport Hub is in an area which is a prime example of Otherness. The people of Khayelitsha live in an outlying, less desirable area which was designated as a result of the apartheid urban planning model and as a result, thresholds exist between the morphology of the Cape Flats and that of the rest of Cape Town. Otherness is prevalent as the architecture of the Cape Flats is seen as negative relative to the sophisticated cosmopolitan language of the rest of Cape Town. It is for this reason that the architects intended treat the projects similarly to projects built in Cape Town but with respect for the local architectural language.

Elements that attempt to address this form of Otherness include “urban devices” as seen in **Illus. 49** such as the benches which are bold and strong and exude a sense of being part of the inner city but are clad with mosaics that are typical of the colouring found in the Peri-Urban areas of Khayelitsha. The blue of the sky, the orange of the earth and the green of the surrounding fauna are carefully laid against a backdrop of white mosaics which mark out the benches as feature elements and shout a much stronger language than the rest of the building.

Another aspect which deals with the Otherness of the low level language of the flats is the break in verticality of the office nodes. The expression of height at the commercial point is symbolic of the emphasis placed on commerce in the inner city and begins to carry the language of Cape Town CBD out into the Peri-Urban landscape. The colonnades in **Illus. 50** portray a language of structure that is typical of a mainstream European urban environment and other elements such as the planar roof forms and parapets help to eradicate any apartheid morphological prejudice within the scheme.



Illus. 49: Plans showing the “urban devices” as benches.
Source: ASA Journal



Illus. 50: Structural essence created by colonnade.
Source: ASA Journal

3.1.3 Haptic Character

The scheme makes an effort to stimulate the senses through the use of materiality but this is somewhat limited. The overreliance on hardscape is typical of many urban open air gathering spaces as there needs to be a robustness that can withstand the barrage of pedestrian movement. The dominant materials are brick, plaster and concrete with scatterings of softer feature materials and this has resulted in a scheme which emphasises practicality but at the cost of sensory delight. The attempt to accentuate the urbanity of the interchange has voided many potential humanistic elements which might have benefitted the sense of Hapticity. Instead of letting elements speak for themselves, the architects have stressed the trees with concentric circles of bricks and blocks and there is little use of timber or other organic non-rigid elements to soften the forms.



Illus. 51: Strong tectonic butt connections. Source: ASA Journal

3.1.4 Tectonic Relevance

The way in which the various elements are connected and language the connections display are mimics the connectivity of the urban environment and fuses it with the Peri-Urban. Starting with the ground forms, the butt jointing of the pavers and rigidity of the seating plinths is extremely strong. They convey purpose and position and it can be argued that this is what is needed in a building type where the purpose of function is so critical to its success. It is accepted that there is a conscious lack of soft forms at ground level which is a practical and functional requirement to maintain a vibrant public urban space. Subtle shadow lines help to accentuate column bases which act as table tops as seen in **Illus. 51** but this could be carried further to the informal trading area.

The connections of the wall and vertical elements to the roof are of a similar language to the ground/vertical aesthetic. The column connections as shown in **Illus. 51** show shadow lines at the roof junctions which help to break the mass of the building and set the

different elements apart. In the walkway columns however, this has been mitigated by the full connections of the base to the ground. The light posts in the public area do not have any other connective distinguishing aspects other than material change which may have been better underlined but the reveals and shadow lines of the column bases/work tops are significant enough that they set themselves apart from the rest of the hardscape.

3.1.5 Summary

As an architectural connection model that addresses social inequality there can be both positives as well as criticisms. It is understandable that the station is a response to a functional requirement but there seems to be a lack of potential for the station to act as a real catalyst for the area. This may be seen in the fact that there are areas for informal trading and some offices to attract people but it uses the existing railway as a mechanism for pedestrian movement through the building rather than acting as a fixed generator for urban life. One of the main positives of the station is that it captures the essence of urbanity through the clear and uninterrupted morphology of the building elements. Functionality is clearly demonstrated and there are no ambiguities about what separate building elements can be used for. This strict purpose is, however, somewhat overshadowed by the distinct lack of “soft” treatment for certain elements. If people are to connect with the building on a haptic and tectonic level then this issue might have been better addressed through consideration towards using more natural elements such as water and wood which may yield a more personal interactive experience with the architecture.

3.2 FARADAY STATION

MMA Architects, Gauteng 2003

3.2.1 Introduction

The proposal for the Project in 2003 was to act as a catalyst for a new precinct development in the old Faraday station area. The Architects primary intention was *“one of a new class of infrastructure projects that seek to redress the historical lack of facilities and effective discrimination against masses of commuters”*. The design was required to reconnect the existing urban fabric to cater for the current needs of the precinct and weave the existing public transport nodes together. This immediately draws parallels to the justification of the study by dealing with concepts of connectivity and social needs.

Illus. 52 shows how the building achieves this by activating large portions of the street edges by opening up the building and thus acting as a generator of urban life. The critical issues that need to be examined are how the connections of the building have been dealt with in dealing with the social needs and if the typology can be used as the basis for an architectural connection model for the Peri-Urban built environment in Durban.



Illus. 52: Market edges are activated by opening up the facades.

Source: IA Journal '03

3.2.2 Addressing Otherness

The main aim of the precinct and the station is connectivity and the upgrading and activating of the old to the new. Any sense of Otherness is not coherently born from a pre-meditated planning model such as Apartheid planning, but rather Otherness may be seen as a stigma of the old, a view expressed by people living in surrounding precincts towards the old Faraday precinct. If we are to engage Otherness from this perspective then there should be a focus on how effective the upgrade has been to rejuvenate and revitalize the area whilst dissolving the stigmas attached to it. One of the ways in which the main activity spines have been revitalized is by creating canopies to accentuate and promote their usage. Areas known as dead areas or

negative spaces have been eradicated such as the space directly adjacent to the N2 highway, where over sailing roof forms echo the continuation of the volumes of the bridges down to the ground which can be seen in **Illus. 53**. Clues on eradicating stigmas associated with “hard” edges can be taken from these solutions and should be noted for their ability to bridge the thresholds of urban spaces. Existing dilapidated buildings such as the old administration buildings and workshops have been revitalized and incorporated into the new scheme which helps to provide new meaning for the existing structures.



Illus. 53: Sailing roof forms connect to the adjacent highway.
Source: IA Journal '03

It is also one of the aims of the development to increase density for trading opportunities in the area and by doing this, generate a higher level of interpersonal connection opportunities. As stigma is a direct result of Otherness, discrimination has been indirectly dealt with on a broader urban planning scale by creating a familiarity in the new precinct. New trading stalls echo the other areas of the city, upgraded thoroughfares and new market spaces within the development have been aligned with the other transport nodes to effectively create a more holistic urban character with enough differentiation to stay unique. These elements which address the stigmas of the old faraday station are vital clues which can be taken and used within a multi modal transport hub in Durban given the stigmas associated within the Peri-Urban communities.

3.2.3 Haptic Character

Connectivity through Hapticity is a core result of the rich materiality that the buildings take on. The upgrading of the markets help to create a strong sensory connection through the smells of the food stalls with on street kiosks and shops adding to the aromas. The feeling of touch has been creatively explored through the usage of local materials such as mud and stone as seen in **Illus. 56** which are

used as cladding, together with sleek lines of steel beams and bracing which are noted in **Illus. 54**. Traditional woven gabled roof ends help to soften the hard edges of some of the buildings and this helps to reinforce the metaphor of “weaving energies”. Through densifying pedestrian spaces and creating more walkable causeways, the precinct aims to generate a vibrant audio place that is synonymous with urban living. The sense of touch is prevalent in many of the buildings features such as the corrugated iron feature wall on the taxi management facility which plays with the idea of verticality and horizontality. The mixture of stone walling, hollow block construction and textural wall surfacing of the building maximise the haptic notion of touch and really invite the individual to be a part of the building. Coloured mosaics are used to accentuate features such as windows and are also themselves made up to be wall murals. The colouration is raw and muted with burnet oranges and cool blues and reds as seen in **Illus. 55** which maximise the earthy tones of the place. This strong use of Hapticity as a building style produces a strong sense of connection from the individual to the building and is used to a far greater extent than the Kuyasa interchange in Cape Town.

3.2.4 Tectonic Relevance

Similar to the Kuyasa interchange, the Faraday precinct buildings do not hide the direct connections of the building materials. It does however achieve a more honest and robust connective language with forms and functions than the Kuyasa station. Buildings such as the taxi management facility are well grounded and have a strong sense of place via the use of a natural stone plinth capped with slate shown in **Illus. 56**. The ground building connection is vital in the visual introduction to the rest of the building and the materials are themselves suggestive of their function. The stone provides a heavy, stereotomic foundation to a building whose very functional nature is that of management. The roof of the building is expressed purposefully without traditional language elements. The light



Illus. 54: Sleek lines of steel bracing.

Source: IA Journal '03



Illus. 55: Bottle wall creates a vibrant haptic connection.

Source foter.com



Illus. 56: Haptic qualities of materiality.

Source: IA Journal '03

appearance of the corrugated iron roof contrasts starkly with the solid mass of the mud plastered walls which gives it a feeling of being highly purposeful – as is the nature of the functions within the building. Each connective junction is purposefully expressed to allow an elegant simplicity and the junctions of the separate materials are stark and exude meaning.

An even starker rendition of function can be seen via the corner emphases in **Illus. 57**. This time however, the oversimplification of functional aesthetic seems to jar with the rest of the building tone. The connecting mechanisms used are steel eaves which protrude dramatically out of the smooth beige of the corner walls. As true to its purpose of expressing the corner as this is, a tectonic clash between the 90 degree corner and the radial overhang should be noted.

Despite some apparent small tectonic jarring, the general expression of connectivity is apparent – from the woven gable ends (**Illus. 58**) which are lightly suspended in the air, to the use of space frame/roof and column junctions of the taxi rank. There is an honest aesthetic about the precinct that gives it an authentic aura and it is this truth of connection that could be captured to give a Durban architectural connection model its essence.

3.2.5 Summary

As a precinct upgrade, the objective was to reconnect and rejuvenate the urban functions of the place, the result is successful in many ways. The buildings are ordered in such a way that they filter people through the site and the upgraded markets and walkways enhance the sense of personal connection. Connections to the adjacent edges are expressed via roof structures and the effort to capture the dynamic of the original precinct and merge it into the greater city is successful. Although there is a strong tectonic character about the buildings, caution must be made not to sacrifice aesthetic order and proportion for the sake of formal honesty. The use of materials carries a strong narrative throughout the precinct and this helps to connect people to the spaces



Illus. 57: A tectonic clash of curved corner canopy and wall junction.

Source: IA Journal '03



Illus. 58: Woven gable ends.

Source: IA Journal '03

through a strong haptic language as seen in **Illus. 59**. The stigma of otherness seems to have changed dramatically and through an architecture that acts as a catalyst for changing functions within the area, the new forms can be seen to stand true long into the future of the site.



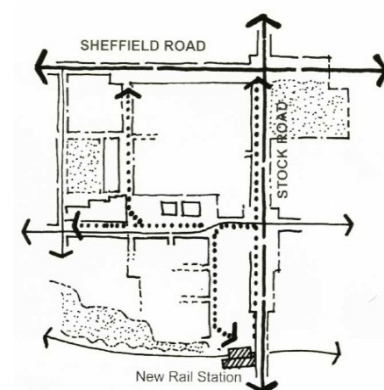
Illus. 59: Materiality helps to create a strong haptic language
Source: joburg.org.za

3.3 STOCK ROAD TRANSPORT INTERCHANGE

ACG Architects, Philippi - Cape Town 2003

3.1.1 Introduction

The primary concept by ACG Architects for the establishment of the station was to offer social services and connect existing services to the disconnected infrastructure of the Philippi area of the Cape Flats. Completed in 2003, the vision of the architects was to create a spatial framework for the different modes of transport to occur in the area as seen in **Illus. 60** as well to offer a base for commercial development in the future. The theory of connection can be discussed as it is a primary mechanism for the derivation of the brief. A major component of the building are the civic functions such as the basketball court and performance stage which aids in reactivating the public and the architecture through direct engagement. There is a concerted effort to emphasise the sense of connection through arrival and departure and it is this connective narrative that the study on the Stock Road Station will focus on.



Illus. 60: A spatial framework for existing transport routes
Source: IA Journal '03

3.1.2 Addressing Otherness

Illus. 61 shows how, by opening up the facades, resulting forms allow it to act as a public space. This helps to guide the functioning towards one of the foremost ideas of situating Otherness – to “define and legitimate the existence of the social and individual self” as is noted



Illus. 61: Open facades allow the building to act as a public space.
Source: IA Journal '03

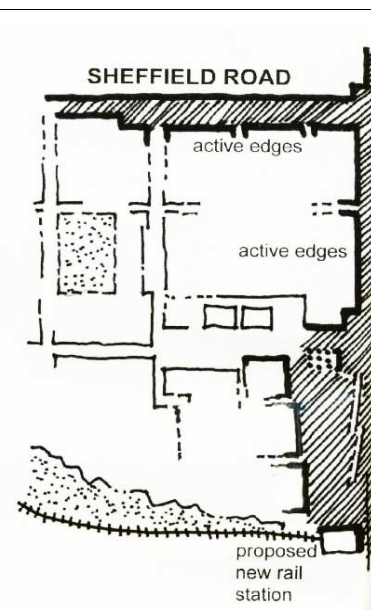
by Friedman in Chapter 2. The functioning of a transport terminal as a public space, within the context of constantly arriving and departing users, helps to address this theory of Otherness by allowing people within the public space to constantly review themselves and their social space in relation to the “others” commuting through the space. This is an interesting concept in that it allows for the interaction between the public and private concomitantly within the station terminal whilst activating the edges of the building to reconnect it with the street front as shown in **Illus. 62**. The façade wall feature on the western edge is intended to further connect the informal traders from the position of the “self” with pedestrian movement i.e. the “others”. This idea of improving the economic status of people living in the area directly relates to the theories outlined by Beteille in that it dislodges the perceived social inequality perceived by those coming to the station from areas of lesser social inequality.

By formalising the informal, the station begins to remove stigmas attached to traders and begins to recognise the built form and social space the traders act in. As is noted by Vanfossen in Chapter 2, this removal of class consciousness begins to occur when the individual passengers perceive a common interest with “informal” traders who share economic and social circumstances of the terminal itself.

3.1.3 Haptic Character

The active road edges of Stock Road Station are characteristically welcoming and soften the entrance to the indoor space dramatically.

Illus. 63 shows how the repetitive use of steel posts give the facades an interactive forest like appeal and enhance the sleek lines of the main building mass inside. The building is mostly muted but the accents of coloured mosaics which are used to emphasise important social issues are an excellent use of haptic communication. The consistent use of steel, masonry and plaster give an effective holistic contrast but there is still a hard edged feel to the architecture that



Illus. 62: Reactivation through active edges.

Source: IA Journal '03



Illus. 63: Forest like appeal through vertical elements.

Source: IA Journal '03

might have been more accommodating through the use of non-industrialized materials.

As is the case in the previous precedents, the use of informal traders can give the station a strong sensory quality through the sense of smell and the grandiose over-use of corrugated iron can be used to amplify the sound of the rain during a squall. The sound of rain on a tin roof may be a simple yet powerful haptic quality for a transport terminal in Durban, given its coastal tropical environment.

3.1.4 Tectonic Relevance

The most striking tectonic building relationship is that of heavy and light as seen in **Illus. 64**. The connection mechanisms such as the steel rafters and web members help to diffuse the thresholds between the heavy mass of the main building and the much lighter planes of the outer pedestrian movement areas. This is important as without these “branches”, the station would seem drastically isolated and inhospitable. The red mass of the masonry helps to ground the mass and this is repeated on the secondary row of columns. The continuity is important to aid in the linking between the outside and inside. The outermost colonnade bases take on the same render as the street side bollards which links well with the angled steel columns and help to create a visual association of the station to the street. An aim of the city was to create a “dignified place” in this marginalized area and this can be seen in the delicate relationship of the roof planes to the main building mass. In this particular case, it is the roof space that is more striking than the connection itself and this is helped with the use of long vertical brick feature walls.

The dignity of the morphological connections and interesting play on solid and void give the building a unique spatial character that helps to create a resonant sense of tectonic intimacy.



Illus. 64: Tectonic contrast between heavy and light.

Source: acgarchitects.co.za

3.1.5 Summary

The most striking connections that the Stock Road Station shows are of an elegant simplicity in the use of structure. It is a good example of how materials and forms are used to echo the surrounding forms of the area. As has been discussed in Chapter 2, this is necessary to diffuse Otherness as it links the Peri-Urban character of the Philippi area of Cape Town back into the greater urban landscape.

The station shows how the informal can be formalized through complex yet elegant tectonic treatment and how verticality and the use of column repetition can be used to mesh the different social spaces into a coherent connective language. There is a strong haptic character through direct use of a varied materiality which enhances the warmth and appeal of the station. Another important element to note is that the station takes on a highly decorative element. This can be seen in sections such as the metal façade screens above the roof canopies. These screens play a significant role in softening the threshold between the outside and the inside and although the tectonic honour is sacrificed somewhat, it really adds a sculptural feel to an otherwise rigid façade.

3.4 CONCLUSION

By examining each case study against three connection theories, a picture emerges about possible real world solutions to construct an architectural connection model in Durban. The use of low rise, highly personalised spaces are shown to be conducive to interpersonal connections whilst elements such as material choice and placement give some important clues on how haptic connections can be made. The tectonic connections are architecturally honest and assist people in their ability to relate to the functioning of spaces. Taking the element of interpersonal connection further, the stations show an ability to harness this connection by using various elements such as

low level bollards, scaled plinths and waist high column bases which all invite human participation. It shows that people will, given the opportunity, will touch, rest upon and generally connect with the building if the parts are conducive to personal connection.

A disparate element noted is that while the buildings do produce a fine interconnectivity on the street level, the roof forms seem self-consciously designed and at odds with the rest of the design. Although broken into smaller entities to minimise the heavy feel of the planes, the forms are still out of scale with the rest of the buildings themselves. It may be that this approach starts to relate the stations more to the urban forms of the city rather than the softer forms of the surrounding built landscape.

The theories can now be applied to relevant stations in Durban with the distinct advantage of having empirical data to measure against the theories. This is important as it allows for a study into how people relate to existing stations that have not consciously developed or applied a connectivity model to bridge on contrasting sides of the Peri-Urban threshold.

CHAPTER FOUR: CASE STUDIES

4.1 DURBAN CENTRAL STATION

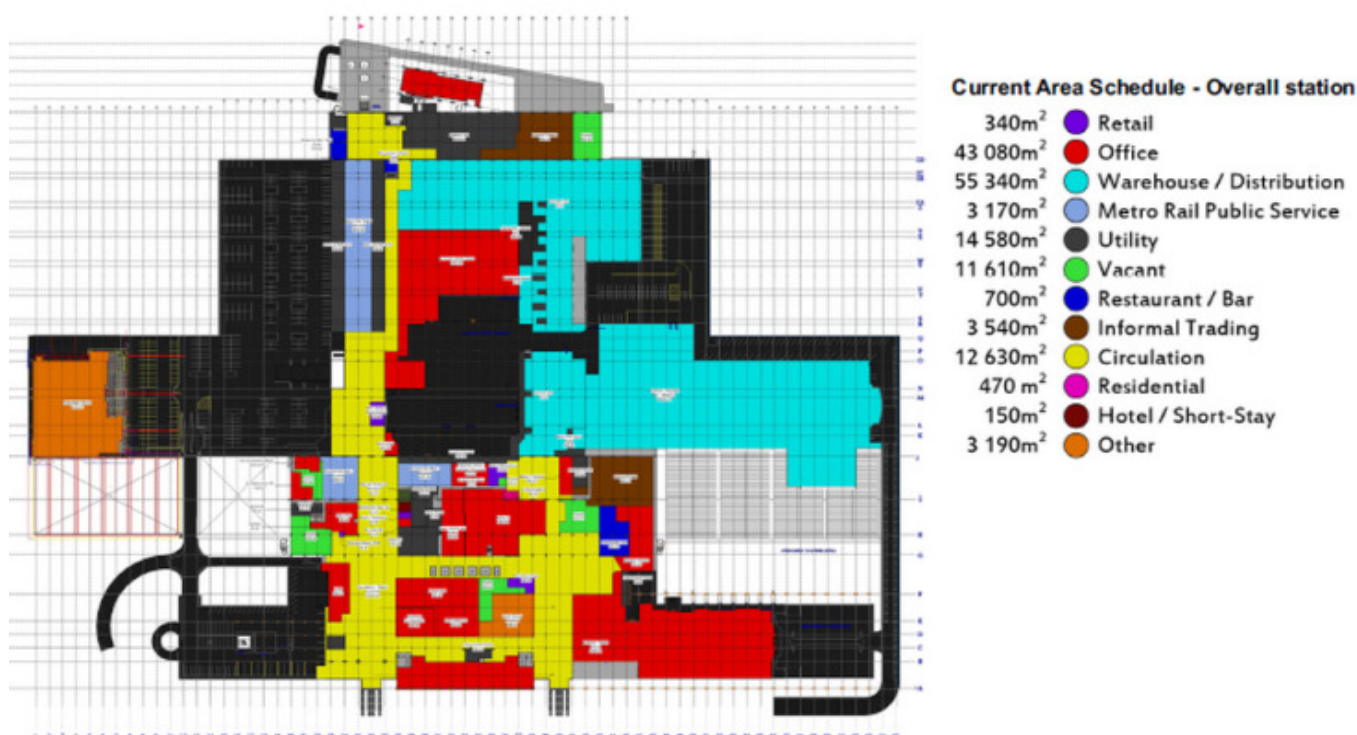
4.1.1 Introduction

Otherness is concerned with two sides, the self and the other. To understand how to create a public transport station for the Peri-Urban disconnected self, an example of a station of the “self” must first be studied.

Durban Central Station is a prime example of a “self” station as it is located within the heart of Durban and was designed during the Apartheid era. It will be analysed from the perspective of how it addresses social inequality and what, if any, tectonic and haptic connections it displays. If a new connective multi modal public transport terminal is to be created within a Peri-Urban area then it is critical to first study an example that shows what the new connection model is trying to address – i.e. an apartheid era, centrally located, terminal building. This is not preclude the presence of some positive attributes that the case study exhibits, but the negative attributes must be highlighted.

4.1.2 Justification of Case study

Durban station is of a substantial size and influence that it should be studied as a prime example of a station of the “self”. The volume of people passing through the station and the level of services and amenities offer an excellent opportunity to study how people connect from the different connective perspectives of the dissertation.



Illus. 65: The strong circulation axes in yellow offer a good opportunity to study how people relate to the numerous services which flank the axes. The light blue metro entrances are highly haptic with timber slats and precast concrete blocks and this relates to a larger number of people congregating around these points. Offices in red however create unnecessary blank edges and emphasise the cold harsh brutalism of the station. Commuters do not engage at all within these spaces and it can be argued that this is problematic as they make up the majority of the central pedestrian walkways. Food stalls are also located far from the main waiting areas.
Source: PRASA 2013

4.1.3 Historical and Social Context

Transport as a service in Durban served the interests of exporters on the point waterfront in the 1860's and then moved and refocused to serve the interests of the public as a commuter service at Pine Terrace during the 1900's. It was only in 1968 that operations moved to the Umgeni road location but what has remained constant is that it has been a vital connection mechanism for the inner city since its



Illus. 66: Initial Georgian Colonial style station was highly decorative and displayed a sense of haptic ornamentality.
Source: PRASA 2013

inception. The main aim of the new station was to increase mainline and suburban passenger loads and parcel traffic. The old Durban station as seen in **Illus. 66** was built in the rich Georgian style during the early 1900's style and displayed a typical artistic sense of design aesthetic. The new station in **Illus. 67** was then built in 1968 was a modern brutalist style building focusing on being robust and functional. The station was envisaged as a mega centre for development and commercial interest, and there was a dramatic overdesign with large volume spaces and column free walkways. With the subsequent degradation of the city centre due to decentralization, the building now stands as a monumental statue of force and presence and this inhibits its potential to be a really dynamic social space. The feeling is that the intentions for the site to become a mega centre for movement has resulted in a low level of flexibility in terms of space and flow.

With the new democracy and a renewed interest in integration and connection, the station suffers on a personal level with the overbearing concrete precast elevations conveying a sense of domination rather than closeness. This is noted in **Illus. 68** and it is this sense of connection that forms the basis of the empirical data study.

The ultimate tectonic shift has been one from a highly expressive form of connectivity to a vastly simplified system of elements which disregard the human scale and appear out of context to the surrounding tectonics of the adjacent urban fabric.

It is important to note the progression from a tectonic perspective. It is known that the Georgian style is far more decorative with lintels and edges being clearly expressed which begins to create a tectonic honesty. The new station complex, hints at a tectonic semblance but the overbearing structural elements completely divorce one from the otherwise pure connectivity of the building elements.



Illus. 67: New modern era station with overbearing use of concrete.
Source: PRASA 2013



Illus. 68: Prominent concrete beams create a feeling of domination.
Source: Author (2013)

4.1.4 Empirical Data

Empirical data has been collected in order to determine how users connect with public transport terminal architecture in the city centre and will be noted against how people connect with the architecture in the Peri-Urban environment. Information gathered has been from observations, interviews, questionnaires and archives.

Observations have revealed a great amount about the types of connections prevalent. For example in the waiting area, the majority of persons chose to use the timber slatted chairs as opposed to the steel industrial chairs as seen in **Illus. 69**. People were more inclined to feel the wood and run hands along the slates as opposed to the users of the steel chairs who simply sat without physically engaging – a note on material Hapticity.

At the north entrance it was noted that users connected physically far more with the columns which were clad in mosaics, leaning, touching and propping up against vs. the columns which were rendered in plain plaster. Areas that were rendered in plain concrete yielded the least amount of physical engagement compared with areas that had an element of hand craft, colour or material warmth. People tended to crowd around food stalls mostly even if they did not actually buy anything. It was also noted that the food stalls had far more haptic connections i.e. the sound of cooking and music from radios, the smell of the food, the chairs were timber as opposed to the plastic chairs of the other stalls and there was an element of movement from the bellows of steam rising upwards to the sellers turning the various foodstuffs. This compared to the highly static qualities of the other informal sellers who sold goods where there was simply a static display with the sellers gazing outwards. Even the sewing stalls in **Illus. 70** had a greater number of people standing around with the sounds of the sewing machines ticking away and the movement of



Illus. 69: Users chose to engage with the more haptic timber furniture.

Source: Author (2013)



Illus. 70: Haptic quality of the sewing machine sounds at the informal trader stalls.

Source: Author (2013)

women weaving cotton compared to the static displays of the other clothes stalls.

In the outside waiting areas, more people sat on the plant pots rather than on the chairs provided even though these were somewhat exposed to the hot sun and tended to congregate around natural flora rather than the man-made elements.

In the hallways, there was a definite tendency for people to stand around in areas that had lower ceilings such as entrances and portals compared with the open foyers of the main concourse.

A point of interest is that information points as noted in **Illus. 71** show the notices and plaques rendered in artistic ways such as the stone centenary plaque and the timber train route displays. These elements stood out and had higher numbers of people looking at them than any of the other brightly coloured printed posters stuck up on the stark walls.

In the local metro halls there was a noticeable difference between numbers of people waiting next to concourse stairs even though there was a far greater traffic than the other plastered walls. The stairs, although not the most practical of places to wait with people constantly moving through were clad in vertical timber slats (**Illus. 72**) and the openings to the outside were permeable precast blocks that fractured the light and made for an interesting collage of shadows and lighting patterns seen in **Illus. 75**.

The least used seating areas throughout the main concourse were those that were flat and tiled with people preferring to stand against stippled walls. This being said, it was interesting to note that the movement of people was slower next to the walls than in the centre of the walkways with users engaging directly compared to the stark directness of movement in the centres as noted in **Illus. 73**.

Regarding hapticity, there is a direct correlation with numbers of users interacting with elements that exhibit a high haptic quality with the highest numbers of people using spaces that expressed different material connections such as timber on concrete or stone on plaster.



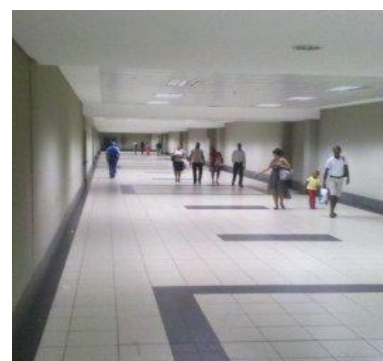
Illus. 71: Stone rendered border of a plaque.

Source: Author (2013)



Illus. 72: Timber slats on the outside facade.

Source: Author (2013)



Illus. 73: Stark walkways with little materiality

Source: Author (2013)

Information gathered from the questionnaire showed unequivocally that the main feeling of disconnection in people arriving from Peri-Urban centres was the lack of access to simple social services such as security services, shops and internet and phone points. When asked about the state of the architecture, most answers revealed that people felt more connected to the simple haptic connections rather than the cold hard concrete elements of Durban station. Discussion about the ways in which a terminal might make people feel more connected yielded answers about access to information and news and most importantly easily accessible access to whether the different modes of transport was late or on time.

All respondents answered that the best area for a transport terminal would be as close as possible to their areas of residence. When asked about size and scale, people responded that the building should not be overbearing but conform to the scale of the surroundings. This may be seen as one of the primary setbacks of Durban central station that is its massive scale both internally and externally.

It should be noted that although the sample group of the study was small, the empirical data gathered yields interesting results regarding the components of otherness. The disconnection on a personal level that the majority of the users felt is indicative of the brutal nature of the CBD architecture. The force and scale of vertical planes are reminiscent of a past western influence – a mentality of the controlling “self” and of subordination towards the former Bantustan communities – the “other”. To address otherness there may have to be a rethinking of how a building which needs to have a certain size to accommodate large numbers of people can be designed in such a way that it remains highly personal. It is also important to keep in mind that with transport oriented development and the critical nature of terminal positioning, there needs to be a way in which the building can act as an icon for way finding without being overbearing to the extent of being dominating.



Illus. 74: Haptic detailing of pre-cast concrete blocks.

Source: Author (2013)

Interviews were conducted with the station manager and head of project planning at the station as well as security. It was noted that there is currently a master plan that is being developed to better utilize the internal spaces for commercial gain as can be seen in **Illus. 75**. As the building needs to generate a profit, it was found that most people were not staying for extended periods of time nor extensively using the retail outlets. This as a result of a lack of anchor tenants and vendors and the brutalist unwelcoming nature of the building.

It was interesting to note that after interviewing the project manager for the master plan the main points of concern for the station were to remove the negative otherness attached to the station, to re-energise the need for and use of the station, to redefine the role of the station and to define a strategic direction for growth and improve usage. These bare direct similarities to issues outlined in the theoretical framework and must be incorporated into the new connection model in Durban's Peri-Urban communities.

4.1.5 Summary

Given that Durban's central station is an example of the "self" to which a new connection model in Peri-Urban communities should aim to counter, it is important so sum up what elements constitute this "self".

The brutal external concrete features seen in **Illus. 76**, although somewhat in context to the rest of the stripped materiality of the city centre, do nothing for allowing people to connect with the building. Research into the design philosophy indicates that strategic areas of planting were meant to soften the otherwise hard appearance of brick, concrete and mosaic, but the reality is that the planters remain untended and are not nearly substantial enough to counter this. Scale and vastness of the internal volumes imply a sense of regimentally and formality that epitomises the strict apartheid era with a strong sense of functionality. Although there is nothing inherently wrong with a building being functional, it should not get to the point



Illus. 75: Currently unutilized internal spaces.

Source: Author (2013)



Illus. 76: Huge concrete exterior gives the impression of the human as a slave to the function of the building.

Source: Author (2013)

where it becomes forced, which is exactly what the current building feels like.

When a person enters the building they can't help but perceive themselves to be a slave to function, a prisoner to the building where any mis-step might result in some harsh consequence. These are the qualities of otherness that must be addressed by forming a new architectural connection model that invigorates rather than controls, encourages rather than forces and stimulates through materiality and tectonics rather than directing as a result of a lack thereof. The building makes an honest attempt at tectonic simplicity through simplifying the building elements into a strong formal language but it is the sheer height and weight of the features themselves that seem to enhance otherness.

As discussed, there needs to be a way to allow for the large numbers of people to use the station in both the vertical and horizontal planes without the station dominating the user. This is no easy task as there is no precedent in for a Durban station which shows how the haptic qualities of certain materials can act on a large scale. It is for this reason that Durban station must be tested against a building which is located in an area which displays a far more haptic identity – the Peri-Urban.

This sets the groundwork for the next station project which is located in an area of the former “other”.



Illus. 77: Otherness is created through the use of hard dominating edges.

Source: Author (2013)

4.2 KWA MASHU STATION PRECINCT

4.2.1 Introduction

The second side concerned with the theory of Otherness is the “other”. In this case, it is the disconnected Peri-Urban communities located as a result of the Apartheid planning model. The case study is the Kwa-Mashu station precinct. It represents a concerted effort on the municipality’s part to change the stigmas attached to the area and to revive a former Bantustan community. The area includes the station itself, the surrounding traders and the associated shopping malls and social services. To situate a new connection model, it is vitally important to take into consideration the immediate surrounding infrastructure such as the new social services seen in **Illus. 78** to gauge whether the station has been able to act as a real catalyst for change.



Illus. 78: New supporting social services architecture is an attempt to reduce the stigmas of the place.
Source: Author (2013)

4.2.2 Justification of Case study

The KwaMashu Township and the shopping precinct in particular have transformed the area into a thriving and safe destination for commuters travelling to and from the city. It forms the starting point of the KwaMashu rail line which connects the whole of KwaMashu to the city centre and lies in the heart of an area which suffered from social disconnection. It therefore satisfies the side of the “other” as a reference point of which to base a new connection model on.



Illus. 79: Torched busses represent the turbulent history of the KwaMashu transformation.
Source: baileyseippel.co.za

4.2.3 Historical and Social Context

KwaMashu has a turbulent history of social disconnection with numerous torching’s and violent protests as seen in **Illus. 79 and 80**. It was formed to house black people from the Cato Manor area during the 1950’s and 60’s and suffered a severe lack of social services and infrastructure. As a result it has one of the highest rates of

unemployment and crime in the country and has become the focus of economic intervention.

After the fall of Apartheid, a new populist approach to station commuter design was being developed by architects such as Derek van Heerden and Janina Masojada which was based on community involvement and which stressed ownership and participation. (KZNIA 4/1997: 03) There has subsequently been an intensive effort to upgrade the transport precinct and as a result, two new police stations have been built linked to shopping malls (**Illus. 81**) with anchor tenants such as Shopright Checkers and new facilities for informal traders are currently being constructed. As a social space the area has seen a real shift in tensions with crime levels and incidents of conflict dropping dramatically since the redevelopment. There are now similarities in architectural styles between the station itself and the new shopping centres and lower level police station which help to create a consistent visual space and a catalyst for further growth.

The heights of the buildings in the precinct respect the low level of the surroundings with only the police station rising to a higher level. This helps to create a much more personalised space and promotes a sense of inter-social connectivity between the numerous traders and commuters. It is this personal connection to the architecture and to other people that the new architectural connection model should attempt to capture and which forms the basis of study. Because the precinct is made up of separate buildings on a variety of different levels as seen in **Illus. 82**, the surroundings have become tied together by the central station. The case study will also focus on how hierarchy of space has been applied and the activities between the spaces has been utilized. This is important as it represents the alternative extreme to Durban's central station which is a hard monolithic structure with little focus on internal connection.



Illus. 80: KwaMashu reeled from the Apartheid racial policies.

Source baileyseippel.co.za



Illus. 81: New shopping malls have been built surrounding the station.

Source: Author (2013)



Illus. 82: Supporting service buildings on lower levels enhance the sense of inter-connectivity.

Source: Author (2013)

4.2.4 Empirical Data

As with the Durban central case study, data has been gathered from direct means including on site interviews and observations.

Interviews were conducted with the local informal traders adjacent to the station as well as commuters who had just disembarked from the trains and taxis.

The traders noted that the development has been successful in creating a space which is conducive to selling as the filtering mechanisms such as the walkways and bridges bypass them directly and they are able to interact and sell right next to the commuters (**Illus. 83**). This is noted in stark contrast to the massive walkways of Durban's station which were created for mass volumes of people rather than a personal vendor- commuter interaction. At the time of the interviews, the traders were waiting for the new trading building to be finished and expressed excitement at being able to have a secure and robust selling environment.

The next series of interviews were with people who use the terminal building on a regular basis as a primary means of connecting with their place of work. This was critical to ascertain the level of otherness which is currently experienced in the building. There was an overwhelming consensus that although positive strides have been made to the infrastructure, the walkways as seen in **Illus. 84** still seem dark and cold. One commuter noted that the outside of the building was a much more pleasant space because of the trees and benches whereas the internal space was void of all life. This was also noted in the Durban station building where internal flora was almost non-existent. Other commuters noted that they enjoyed the fact that is quick to disembark from the station and that there was a jovial atmosphere surrounding the building itself. This data shows that although the station is representative of the “other” it actually works far better in terms of a “Person to Person” connective environment.



Illus. 83: Traders make use of the walkway bridges to display goods.
Source: Author (2013)



Illus. 84: External walkways remain cold and void of colour.
Source: Author (2013)

As this is a multi-modal station, it was observed that approximately 80% of people arriving at the station were by taxi with the rest by bus and a fraction by private car. For this reason, the taxi rank was the second largest building adjacent to the main station, with bus stops being a distant third. By locating the taxi rank a slight distance from the station, there was an opportunity for interaction between the commuters and the traders, which is idea for generating revenue for the people living in the area. This again lies in contrast to the Durban central station where, although the public transport planning philosophy is different, there is an inherent neglect for access to traders on the east side entrance.

From a haptic perspective, it must be mentioned that materiality has been used to a far greater extent than the Durban road station. The use of steel is used as a space frame system to hold up the roof but is not excessive that it becomes overpowering. Slate walls increase the haptic quality of the internal spaces and corrugated iron cladding of the walls helps to reference the surrounding Peri-Urban structures and adds a local flavour to the building. This is accented with the use of mesh inlays with external features featuring traditional African colour palettes.

It is important to focus on the utilization of the spaces between the buildings as mentioned above and there is a distinct ambience that has been created as a result of letting people customize their own spaces. On the West side between the shopping centre and the station, vendors have set up stalls selling fruits, vegetables and clothes and this acts as a type of haptic-market link between the formal shopping centre and the station. It helps to soften the threshold created by the street edge and allows people the opportunity to converse and stay interactive even after leaving the station. On the East side, between the exit and smaller shops, the design team has allowed for palm trees and urban furniture to help soften the space. This makes a dramatic difference to the haptic feel of the pedestrian corridor's and helps to integrate the buildings into the surrounding landscape. Spaces between the container markets are split with multi-purpose concrete



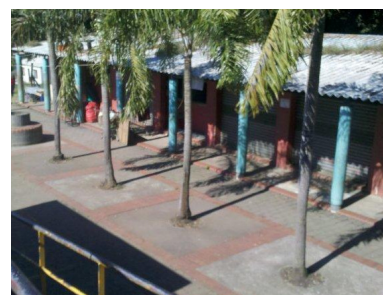
Illus. 85: Adjacent taxi rank provides a primary source of transport to and from the station.
Source: Author (2013)



Illus. 86: Internal steel space frame creates a vibrant roof/office interface.
Source: Author (2013)



Illus. 87: Internal steel space frame creates a vibrant roof/office interface.
Source: Author (2013)



Illus. 88: Trees help to soften the external space.
Source: Author (2013)

countertops which again help to relax the hard edges of the steel facades. The box counters also act as cooking ovens and storage facilities and the spaces between the boxes create a dynamic interplay between the sellers and buyers. It is these kinds of connections that need to be incorporated into the new connection model for Durban's Peri-Urban communities.

One particular area of interest that needs attention is the waiting platform noted in **Illus. 89**. There was a distinct lack of attention to haptic elements and the overbearing steel beams of the floor above creates a cage like effect, exactly the opposite to what would be expected in an area where most of the people would be static for the longest period of time within a station environment. Similar to the Durban station, the overuse of concrete begins to hamper the buildings ability to allow for interaction. Very few people were seen leaning on, against or touching the columns compared to the level of interaction with the mosaic clad columns at the Durban station. Even some simple paint patterns or local artist created surfaces would contribute hugely to the space and help to lighten the overbearing nature of the material.

From a tectonic perspective, the most attention has been given to the articulation of the steel work on the upper levels which helps to relax its visual weight. Chamfered bollards and ribbed balustrade walls create a puzzle like effect and really begin to express the tactility of its function. Again although the railings and balusters are all in steel, the simple colour change from black to yellow and from square to a circular profile as seen in **Illus.'s 90 and 91** creates a notion of floatation as one winds up the main staircases.

Stone clad entrance columns are capped with a concrete plaster band that caps off the structure neatly and enhances the lightness of the corrugated iron roof. Most of the buildings elements are expressed using materiality and this gives function to the different parts.

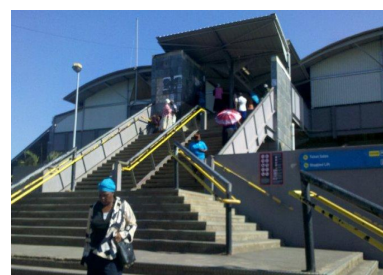
The flooring as seen in **Illus. 92** begins to display different accents according to the areas but this could have been carried further by



Illus. 89: Waiting platform has a distinct lack of haptic qualities.
Source: Author (2013)



Illus. 90: Creative chamfering of steelwork on the upper walkways.
Source: Author (2013)

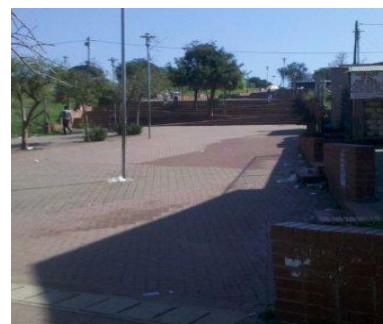


Illus. 91: The yellow accents of the staircase railings help to lessen the visual weight of the steel. This also helps to elongate the stout forms of the entrance and guide the commuter up into the space.
Source: Author (2013)

possibly introducing a different variety of textures at thresholds and edges. There has been an attempt at colouration in the surrounding pavements of the street area but again, this could have been continued to the informal traders area. The new ablutions in **Illus. 93** are comprised completely of red brick in soldier course and stand out but to the detriment of the overall aesthetic of the place.

The newly completed building for traders (**Illus. 94**) shows an ambition to express the different parts of the shop fronts i.e. the overhead lintels and trading deck, but the overbearing nature of the concrete acts to the detriment of the building. The police stations use the same materials as the main terminal building but are highly rigid in contrast with the stations light over sailing roofs.

On the whole, there is a define effort to create a holistic architectural appeal to the area with the use of standardised materials but by far the greatest tectonic resonance can be seen in the station terminal building.



Illus. 92: Surrounding pavement design attempts to articulate spaces but is not dynamic.

Source: Author (2013)



Illus. 93: Soldier course feature buildings are imaginative but overbearing.

Source: Author (2013)

Illus. 94: Newly completed trading stalls use a material interplay between the hard concrete lintols which form the trading shelf and lintol and the lightweight corrugated iron roof. Vertical accents such as the doorways contrast with the horizontality of the building.

Source: Author (2013)

4.2.5 Summary

The idea of the “other” as a precedent study begins with the built environment in which it is situated. In KwaMashu the low rise, tactile and highly haptic architectural feel is predominant. This is not to say that the shacks and RDP housing complexes represent effective architecture but it nonetheless offers a starting point for the connection model. If a new architectural connection model in a Peri-Urban built environment is to act as a mechanism for connection back into the greater Durban core, then it is the relationship to the existing architecture that is prevalent in the area that should be addressed.

The forms of Durban’s central station are strong and functional with a focus on contemporary design methods but lack sympathy for personal expression and connection. The forms of the station in the KwaMashu precinct are far more respectful of the local atmosphere but seem to lack the iconic presence and weight needed for a catalytic building typology.

It is this gap in the authoritative vs. personal design of multi-modal transport terminal architecture that the new model is to address now that the different haptic and tectonic forms of connection have been examined.



Illus. 95: Low rise architecture that makes use of materiality and framed features.

Source: Author (2013)



Illus. 96: Over sailing forms and simple lightweight features help to situate the building into the surroundings. By respecting the forms of the local dwellings but creating a strong design aesthetic, the building helps to relate to the forms of the urban core without sacrificing the nature of the place.

Source: Author (2013)

4.3 CONCLUSION

Having studied two divergent examples of stations which represent the theory of otherness, there are some conclusions which can be drawn. It is interesting to note how the norms and ideals associated with Durban station, which represents the notion of the “self” is actually the station which is least connected from the perspective of the three theories of otherness, hapticity and tectonics. This begs the question of how the architecture of the former oppressor was able to succeed in semblance over a more honest and personal architecture found in the Peri-Urban communities. It does however fit the representation of the self by being imposing and somewhat disregarding the human scale. This is a fact which needs to be addressed as it is commonplace in Durban's CBD.

The architecture of the KwaMashu Station, although not nearly as dramatic, works far better for connecting people to its style and to each other. The haptic and tectonic connections are more present and there is a truthfulness that is missing from the Durban station. The central problem with this station remains that it is both fragmented structurally and not of sufficient scale so as to relate to the urban form which is set to encroach in future. This is a concern as the tentativeness of the design does not do enough to act as a real catalyst to address the social inequalities in the area from a power centre of this type.

A compromise between the two stations seems to be the way forward utilising the raw presence of the “self” together with the tactile respect of the “other”. It is this combination of the urban form and the peri-urban hapticity that is needed in a new architectural connection model. This is also important to bear in mind as the site for the model should be located in a threshold space between the urban and the peri-urban to truly offer a connection.

CHAPTER FIVE: CONCLUSIONS & RECOMMENDATIONS

5.1 CONCLUSIONS

It is clear that in order for an architectural connection model to be effective, the fundamental characteristics of connection theory must be applied. These are the “Person to Person, the “Person to Architecture” and the “Architecture to Architecture” connections. Each are separate but together make up a detailed and analytical framework to combat the pervading problem of otherness. The conclusions mentioned in this chapter shall sum up the responses to the key questions which are raised. The first key research question relates to the forms of social inequality that can be identified as a result of the current connection model in Durban's Peri-Urban built environment. As noted in chapter 2, the forms of social inequality which have surfaced include Geographical disconnection, Economic inequality, Cultural Exclusion, Access to basic Social Services and finally Poverty.

Not only are these inequalities characteristic to Peri-Urbanism but they are also root outcomes of Othering. The haptic qualities are tightly fused into the cultural aspects of these inequalities with poverty and economics a direct result of otherness. If these inequalities are to be addressed through a connection model then a response must not only be surface level, but a fine grain approach including looking at the tectonics of the problems.

The second research question which is raised regards why the current connection model has contributed to the forms of social inequality in Durban's Peri-Urban built environment. This inequality can be attributed largely to the Apartheid planning model. This has resulted in service delivery problems to these areas and a lack of delivery structure.

The problem of stigma is central to the problems related to social inequality. The apartheid model of social disconnection has caused

numerous social struggles within the Peri-Urban place including a stigma of vernacular architecture as being connected with poverty.

This is because Peri-Urban architecture does not have a sufficient theoretical and visual presence or “weight” required to act as a catalytic building typology to reconnect these areas back into Durban’s urban core. The three theories become vital in addressing this question. In order to address otherness there needs to be a change in the identity of the station architecture. This change must, however, be reflective of the culture of the place without glorifying that which is not desirable. The Hapticity has a large role to play in this new identity as there will have to be a recognition of the material of the city as a recognition of the past, but also a new honest materiality that speaks of the present and pushes the boundaries towards the future.

The third and final research question relates to how a new architectural connection model can address social inequalities in Durban’s Peri-Urban built environment. Whilst the answer to this question is complex and requires direct responses to the criterion listed in the dissertation, the areas which are of critical concern should be narrowed down. The first is to create power centres within the Peri-Urban communities in order to act as a catalyst for development in the area. The model must eliminate the negative stigma of the Peri-Urban built form and at the same time reduce the morphological disconnection between urban and Peri-Urban architecture by being located within the existing urban threshold. This is necessary in order to deliver critical social and economic amenities and to bridge the existing cultural stigmas between the urban and the Peri-Urban. Through Hapticity there needs to be a more person connection from the architecture to the people. This can be achieved through the use of materials specific to the area to create haptic connections and a sense of place for the area. Finally through tectonics, the model should allow for an honest tectonic intimacy between the joints in order to dissolve the idea of a strict class identity for the different people using the building,

5.2 RECOMMENDATIONS AND ANALYSIS

The recommendation is to adopt a design approach which directly addresses the issues mentioned in the conclusions. A key component of this is Transport Oriented Development (TOD). A TOD is a development that is designed as mixed use centres and is focused on access to public transport facilities. These public facilities are the key proponents which are needed to address social inequality and it could thus be argued that a more mixed use facility might offer a more successful framework for an architectural connection model. The benefits of TOD as outlined in the report by the African Development Economic Consultants (ADEC) is that it promotes the development of compact, walkable mixed use communities around transit stations as a way of reducing automobile dependency and enhancing quality of life (ADEC).

The current trend along Durban's suburbs especially in the northern areas is the development within the constructs of New Urbanism. It is critical that Durban's Peri-Urban communities respond to this trend as it is one of the primary methods of new development along the urban fringes. The premise of the new-urbanism model is built in pedestrianism freedom of connection and integrating uses to create mixed-use buildings of a sufficient scale to relate to the streetscape. These clues offer valuable information into how an architectural connection model can continue along the lines of the cities vision for a new urbanism typology to emerge along its peripheries. The ideas of walkability, mixed use and freedom of connection to different requirements of living might be taken further in the proposed model to allow for a vast array of social services within the building which might ultimately allow it to offer uses that address social inequality and not just a means of getting to them.

Brian Edwards (1997), advocates rail as the ultimate public transporter and as such should be at the epicentre of each new

development. Considering the trend towards New Urbanism, this would give the option of the public transport terminal as the epicentre of the architectural connection model in connection with traditional playgrounds and parks. New Urbanism relies on walkability and the use of bicycles and motorbikes within the communities and advises that no homestead should be more than a five minute commute from the centre. This works in favour of Edward's model in that in that public railway terminals should be a short distance from ones starting point and offers a possible starting point for the growth of the proposed architectural connection model.

5.2.1 Approach to Site

The ADEC provides good suggestions on the best site to locate a TOD architectural connection model. It states that *“many of the benefits of transportation are concentrated at nodes or interchanges, where traffic, exposure, networks, and passenger loads are maximised. At transportation interchanges, the demand for land, and therefore the value of land, is heightened. As such, opportunities for capturing value for the purposes of poverty alleviation are often maximised at transport interchanges.”* (ADEC: 12)

This immediately begins to narrow the sites within Durban's Peri-Urban communities that could be ideal for an architectural connection model. Suitable locations should be at existing and proposed transport interchanges to address the maximum population facing social inequality. The site should also be located in areas that are close to residential communities so as to satisfy the New Urbanism model and allow for easy access to the building.

5.2.2 Approach to Accommodation Schedule

Based on the required size of 40 000m² for the development, similarities can be drawn from the Durban Station building which is of similar size with supplementary services from the KwaMashu Station precinct and research. Based on the key theories of Otherness,

Hapticity and Tectonics, an approach should be taken which aims to create an inclusive station with economic potential for local residents of the Peri-Urban area such as Bicycle Rental systems, Retail, Long term storage facilities, Offices, Restaurants, Café areas, basic needs shops and informal trading areas. There should also be areas which promote the connection of people both from the area in which they live to the urban forms of the city and also to the station itself. This can be achieved through many different public spaces such as educational facilities Children's Centres, Meeting Roods, Multi-Modal Parking Areas, Parks/Play areas, Residential components, Skills Development and training rooms. The back of house and functional components should also be taken into consideration and should include Metro Rail Public Services, Reception / Tickets and Sales, Security offices and Utilities.

Key components of the scheme are service delivery items which have been highlighted in the dissertation. These include: Banks / ATM's, Credit Management Services, Home Affairs Remote Offices, Internet Training Centres, Municipal Service Centres, Pension pay points, a police station and Post Office.

APPENDICES

APPENDIX A

UNIVERSITY OF KWAZULU NATAL
SCHOOL OF BUILT ENVIRONMENT AND
DEVELOPMENT STUDIES

DISSERTATION QUESTIONNAIRE

RESEARCHER: MR CRAIG CULLEN

ADVISOR: MR JUAN SOLIS - ARIAS



PH: 071 501 0125

PH: 031 260 2304

Please note the following:

- The Purpose of the questionnaire is towards the M.Arch Degree
- The identity and institutional association of the researcher and supervisor/project leader and contact details are as noted above
- Participation is completely voluntary
- Responses will be treated in a confidential manner
- Anonymity will be ensured where appropriate
- Participants are free to withdraw from the research at any time without any negative or undesirable consequences to themselves
- There shall be no benefits as a result of participation

DETAILS:

Age:.....

Gender:.....

Occupation:.....

Reason for Using the Station:.....

Modes of transport required:.....

Commute time to and from the station:.....

Station usage per month:.....

Station services most used:.....

QUESTIONS:

1. Do you feel disconnected from the Durban Urban centre - how so?

2. In your opinion, what has caused this sense of disconnection?

3. In what ways might a transport terminal building make you feel more connected to the rest of Durban?

4. What social services to you feel most disconnected from in your community?

5. In which location would a new transport terminal best serve your needs for connection back into the greater Durban whole and why?

APPENDIX B

UNIVERSITY OF KWAZULU NATAL
SCHOOL OF BUILT ENVIRONMENT AND
DEVELOPMENT STUDIES
MASTER OF ARCHITECTURE



DISSERTATION INTERVIEW FORM

RESEARCHER: MR CRAIG CULLEN

PH: 071 501 0125

ADVISOR: MR JUAN SOLIS - ARIAS

PH: 031 260 2304

The following is noted:

- The purpose of the interview is towards the M.Arch Degree
- The identity and institutional association of the researcher and supervisor/project leader and contact details are as noted above
- Participation is voluntary
- Responses will be treated in a confidential manner
- Anonymity will be ensured where appropriate
- Participants are free to withdraw from the research at any time without any negative or undesirable consequences to themselves
- There shall be no benefits as a result of their participation

DETAILS:

Name:

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Position:

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Signature:.....Date:.....

Station Vision:

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Station Usage Statistics:

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Main Operational problems:

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User Complaints:

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Areas Currently under improvement:

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Safety and Security Issues:

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Leasing Arrangements:

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Future Plans:

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